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RADIO **AMATEUR**



Journal of the Wireless Institute of Australia

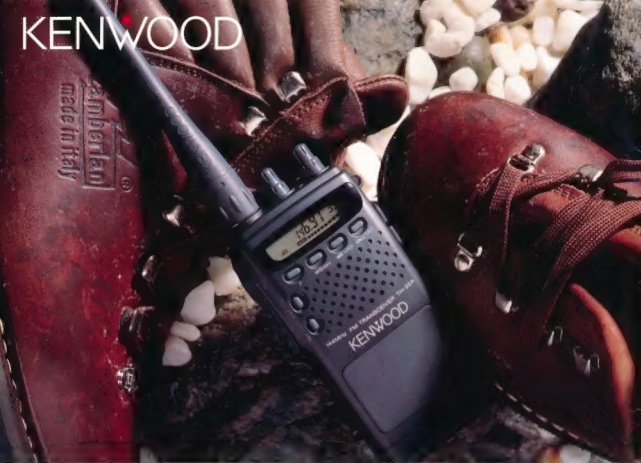


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All contributions and correspondence concerning the content of *Amateur Radio* should be forwarded to:

Amateur Radio

PO Box 2175

Caulfield Junction VIC 3161

REGISTERED OFFICE

3105 Hawthorn Road
Caulfield North VIC 3161

Telephone: (03) 528 5962

Fax: (03) 523 8191

Business Hours: 9:30 am to 3 pm weekdays

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Cover

Ron Fisher VK3OM's fully equipped Toyota Hiace van parked at the Devil's Marbles in the Northern Territory during his 1994 around Australia expedition. Ron and wife Lyn travelled in company with two other couples, including editor Bill Rice VK3ABP and wife Margaret. Amateur radio operation was an important part of their travels. Ron used a Yaesu FT747 on HF and an ICOM IC28A on 2 metres. Mobile HF antennas included a Hustler and a Global (see page 12 of last month's *Amateur Radio* for more details).

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs, that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

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3/105 Hawthorn Rd, Caulfield North, Vic 3161

All Mail to:

PO Box 2175, Caulfield Junction, Vic 3161

Telephone: (03) 528 5962

Fax: (03) 523 8191

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Editor's Comment

Licence Fees

I must preface these comments by making clear that they are entirely my own personal opinions and do not necessarily reflect the views of Federal Council or anyone else.

Firstly, judging by the volume of mail received since the new fees were announced, there appears to have been a violent reaction by many amateurs to the magnitude of the increases. Such a reaction was to be expected to a proposed fee level not far short of twice its previous value (from \$37 to \$69 for a full licence). We are accustomed to various prices, taxes, duties, etc being increased from time to time, but never by such a rise in one blow!

There has been a suggestion by some that the increases were provisional and still subject to re-negotiation (as hinted in last month's insert to *Amateur Radio*, with the possibility of rising further, or falling, by as much as \$10). But even \$59 is still much more than \$37.

This month's insert, protesting at the rises, was not originated by Federal Council (it was the idea of Ian Hunt VK5QX), but does have its support. It gives all of you an opportunity to express your own attitudes personally. Likewise, the comments by Stephen Pall on the *How's DX* page are his own thoughts, but do make comparison with CB operators whose licences are now free!

Altogether, there seem to be many anomalies in the proposals, which require a great deal more convincing justification than has been received so far.

Bill Rice VK3ABP
Editor
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WIA Videotape Library

It is customary to list all the videotape titles available from the WIA Videotape Library in the February issue of *Amateur Radio* magazine each year, as well as explain how members and clubs may borrow from the library.

Bob Godfrey VK4BOB advises that there have been no new titles added to the library since compilation of the list that appeared in the February 1994 issue of *Amateur Radio*.

Therefore, because space is at a premium in this issue of the magazine, we have decided not to print the list this year. If you want details of the Videotape Library, please refer to page 27 of the February 1994 issue of *Amateur Radio*. If you do not have access to that issue, a photocopy of the listing is available from the Federal Office for \$2.50; or you may contact the Federal Videotape Librarian, Bob Godfrey VK4BOB, by writing to him at 20 Buckra Street, Bracken Ridge QLD 4107, or by telephoning him after hours on (07) 269 5380.

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QSP News

Amateur Radio Talking Book

The WIA has been negotiating for some time with the Royal Institute for the Blind in Victoria to have *Amateur Radio* converted onto tape for the blind.

Despite the fact that we have two volunteers who have presented sample readings which were accepted, we were informed on 8 December that the project was now "on hold" while the User Committee investigates the viability of the scheme.

To lend support to the project it

could be of assistance if amateurs who would use this service could write to:-
Ms Linley Wallis, Chief Librarian,
557 St Kilda Road, Melbourne, VIC
3000.

Special Event Station V175RAAF

Bob VK4ACL, secretary of the Air Forces Amateur Radio NET, advises that, in 1996, the AFAR Net will be putting on air the special event station V175RAAF to celebrate the 75th anniversary of

the Royal Australian Air Force (RAAF).

The special event station will operate on all amateur frequencies (except WARC) in all modes, including digital.

The major sponsor will be the Department of Defence (RAAF) which has offered to supply certificates and QSL cards.

The AFAR Net meets on Tuesday evenings on 3567 and 3610 kHz, and on Friday afternoons on 7085 kHz.

The awards manager is Brian VK4LV (QTHR).

WIA Divisions

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

Division Address	Officers	Weekly News Broadcasts	1995 Fees
VK1 ACT Division GPO Box 800 Canberra ACT 2601 Phone (06) 247 7006	President Rob Apathy Secretary Len Jones Treasurer Don Hume	VK1KRA VK1NLJ VK1DHF	(F) \$70.00 (G) (S) \$56.00 (X) \$42.00
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VK3 Victorian Division 40G Victory Boulevard Ashburton Vic 3147 Phone (03) 885 9261	President Jim Linton Secretary Barry Wilton Treasurer Rob Bailey (Office hours Tue & Thur 0830-1530)	VK3PC VK3XV VK3XLZ	(F) \$72.00 (G) (S) \$56.00 (X) \$44.00
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VK7 Tasmanian Division 148 Derwent Avenue Lindisfarne TAS 7015 Phone (002) 43 8435	President Andrew Dixon Secretary Ted Beard Treasurer Phil Harbeck	VK7GL VK7EB VK7PU	(F) \$69.00 (G) (S) \$55.65 (X) \$40.00
VK8 (Northern Territory is part of the VK5 Division and relays broadcasts from VK5 as shown received on 14 or 26 MHz).			

Note: All times are local. All frequencies MHz.

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Three-year membership available to (F) (G) (X) grades at fee x 3 times.

“Paddyboard” Circuit Construction

A black and white photograph showing various tools and materials laid out on a flat surface. The items include a hand saw, a bottle of glue, a pair of pliers, a coiled wire, a straight wire, and several small rectangular pieces of material.

A circuit board construction method which has not received the attention it deserves uses pads of appropriate size attached to plain

The second method, which I prefer, uses pads of double-sided board. Using bent long-nose pliers as an extra hand to hold the pad on the workbench, apply a narrow thin line of solder along two opposite edges of one surface of the pad foil (photo 2).

Place the pad, pre-soldered side down, onto the board in the exact spot required. Again use the bent pliers to lightly clamp the pad in position (photo 3).

Now this is the crafty part. Apply the tip of your soldering iron at an angle of about 45 degrees so that the tip makes contact with the board and the lower surface of the pad at the very edge of the foil. Melt a little extra solder at the junction as you slide the tip along. A small amount of solder will then "sweat" under the pad. Do the same at the opposite edge. Presto! the pad is firmly attached. Visually check that there are no solder bridges between top and bottom of the pad.

If you need to remove a pad, apply the tip of the iron as before, then place a knife blade under the pad and gently lift one edge just a bit, then do the same with the opposite edge whilst holding the pad with long-nosed pliers, and lift the pad from the board.

For multi leaded components, we will need a "substrate" pad, sized

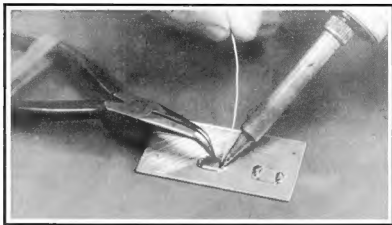


Photo 3 Soldering the pad onto the board.

accordingly. For instance, with 8-leg ICs, try a substrate of perhaps 18 mm x 20 or 25 mm, with spare lands at the ends if desired. An ordinary vice will not normally grip circuit board on its edges for working this material.

Shown is a suggested holding device (left in photo 1). The jig is made from a 65 mm length of 10 x 40

mm hardwood. Using a tenon saw and chisel, cut a channel 18 mm wide along the length of one surface of the wood, about 1.5 mm deep (slightly shallower than your board thickness). Two countersink wood screws are fitted to provide a tightening arrangement. The holes should be clearance to half the width, then

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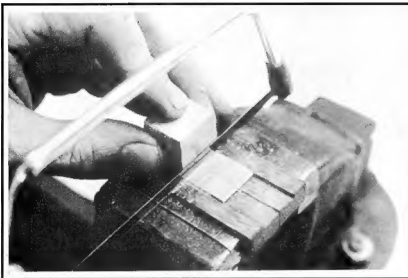


Photo 4 Cutting the substrate.

woodscrew thread in the other half. When the holes for the screws have been drilled, saw the wood lengthways down the middle.

To make a substrate, place your circuit material in the jig and tighten the screws so that it is firmly held. The jig may then be fixed in an ordinary vice; a slightly firmer grip will thus be applied to the job when the vice is tightened. An Eclipse 14J junior hack-saw is a good tool to cut the individual lands. Hold a small scrap of timber against the side of the blade as a guide when starting the cut, then draw the teeth square across the surface of the board (photo 4). Remove just sufficient of the foil to form the lands.

It would be a good plan to socket the ICs, thus avoiding the need for great accuracy in cutting the lands. Wire-wrap and the cheaper sockets allow you to bend their legs a little so that they will be lined up nicely. Substrates may be glued or soldered to the main board in a similar manner to that described for the smaller pads.

We can also make tag strips using this method. With double-sided board, make a substrate with as many lands (or tags) as desired, both sides if necessary. Instead of placing them flat upon the board, they may be soldered vertically on edge to enable the construction of quite compact and dense circuitry, or for use as anchor points for wires and cables.

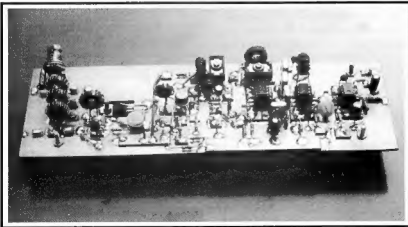


Photo 5 "Paddyboard" construction.

Acknowledgments

Discussions and correspondence with Roy Hartkopf VK3AOH ("Paddyboard" idea), and Basil Dale VK2AW.

References and Further Reading

1. *Build It Yourself From QST* — Hale, QST April-July '92 (excellent series).
2. *How To Lay Out RF Circuits* — White, *Rad Comm* Feb-Mar '91 (matrix pin method).
3. *Solid State Power* — Hepburn, *ARA* Nos 12 and 13 (amplifier using pad board construction).

"Nerr Meian" Gatters Road, Wonga Park VIC 3115

BT

QSP News

G3AAJ Receives MBE for Services to Amateur Radio

Bill Magnusson VK3JT advised of the following news item from Martin Sweeting G3YJO, Chairman of AMSAT-UK.

Congratulations to Ron Broadbent G3AAJ, Hon Secretary and Treasurer of AMSAT-UK who was awarded an MBE (Member of the British Empire Medal) in the New Year UK Prime Minister's Civil Honours list in recognition of his services to amateur radio.

This award is most well-deserved and is an honour for both Ron and AMSAT-UK, recognising his many years of devoted service to AMSAT and its members worldwide as well as the contribution of AMSAT to the technical advancement of space technology.

I am sure that you will all join in congratulating both Ron and Beryl and also take this opportunity to thank them for all their unstinting hard work in support of AMSAT and amateur radio.

Bill VK3JT points out it is not so long ago that our own Graham Ratcliffe VK5AGR received an OA (Order of Australia) for similar activities with AMSAT in Australia.

■ Technical

Technical Abstracts

*Gil Sones VK3AUI**

Red Sprites and Blue Jets

Red Spites and Blue Jets are the names given to massive lightning flashes that have been recorded above thunderstorms. The Red Spites appeared to travel as high as 60 miles, or 100 km, which is the area where sporadic E occurs. The Blue Jets reached upwards of 20 miles or 30 km. Observations were recorded by video taken from high flying jet aircraft.

The report was originally sourced from articles in *Aviation Week and Space Technology* concerning work by Drs Davis Sentman and Eugene Wescott. The reports were picked up and details published in CQ for October 1994 by Joe Lynch N6CL, the VHF Plus column contributor. The item was also reported in the *Melbourne Herald Sun* on 8 December 1994.

The discovery raises a lot of questions which will merit further research. The relationship between the flashes and Sporadic E formation and propagation is of some interest to us as radio amateurs.

Half Watt CW Transmitter

A single IC CW transmitter giving half a watt of RF output was described in QST November 1994 *Hints and Kinks* by Lew Smith, W7KSB. The only reservation is that, to obtain maximum output, you must push the supply voltage into the region between the published maximum and the actual breakdown voltage of the device. However, the IC is a relatively cheap high speed CMOS octal buffer so that the pain of finding the absolute maximum voltage is not acute.

The circuit uses a high speed CMOS octal inverting buffer IC type 74HC240 configured as a crystal oscillator and power amplifier. Operation is possible on bands up to

10 metres with component values given for 10, 15, and 20 metres. One section is used as a crystal oscillator and four sections are paralleled as the power amplifier. Dissipation is 0.5 watt on 20 metres and 0.9 watt on 10 metres. Heat sinking is needed but not epoxying the IC "dead bug" style to a ground plane is adequate.

Supply voltage is a compromise between destruction and output. The author, N7KSB, found the destruct voltage to be of the order of 9 volts with a satisfactory operating voltage being 7.8 to 8 volts. The listed supply

voltage is 7 volts so the choice of supply voltage is a balance between greed for output and survival of the device.

The circuit of the transmitter is given in Fig 1. Output coil and capacitor values are given in Table 1. The lead lengths of L1 should be short or you will need to adjust the coil winding.

Key click filter constants give a 33 mSec time constant due to the characteristics of the IC which make the control of key clicks difficult.

Lithium Backup Battery Replacement

An interesting technique to replace a lithium backup battery in an ICOM IC271H was given in *Hints and Kinks* in the October 1994 issue of QST. The author was Phil Carino AG8U who showed how to replace the lithium backup battery with a large capacitance low leakage capacitor.

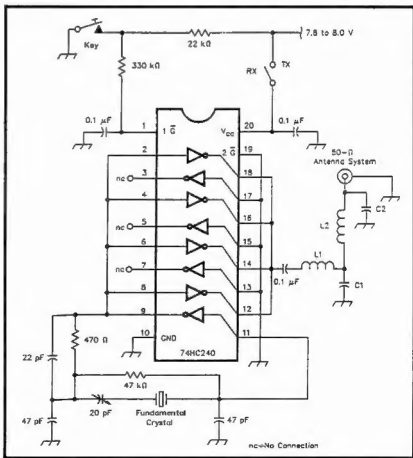


Fig 1 — Half Watt CW Transmitter

Table 1**Output Filter Component Values**

Band (metres)	10	15	20
C1 pF	330	470	680
C2 pF	100	150	220
L1	3 turns (all 5/8 inch long or 15 mm)	4 turns	5.5 turns
L2	7 turns 5/8 in long or 15 mm	10 turns both 1 inch long or 25 mm.	12 turns

C1 and C2 are mica or ceramic

L1 and L2 are 3/8 inch inner diameter
or 9 mm wound with # 14 wire.

alternative is to purchase a new module.

The lid of the module must be removed to gain access to the internal circuitry. The modules internally consist of a ceramic or Alumina substrate with the circuitry on it. Failure can occur if thermal expansion and contraction of the substrate cracks one of the tracks. Opening the module may require a hacksaw but, if you are lucky, the lid may only be a snap fit. It is a last ditch, out of warranty, procedure.

With the lid open you may be able to find an open circuit. You then must perform the delicate job of bridging the gap with a jumper. The use of a soldering iron with a high thermal capacity is recommended as the substrate will conduct heat away very efficiently. A complication is the small size of the tracks and components. This is, after all, a last ditch, out of warranty, attempt to avoid an expensive replacement and so some difficulty is to be expected.

*Co PO Box 2173, Caulfield Junction VIC 3161

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This provides enough capacity to hold the memory during periods when the transceiver is switched off.

The circuit is shown in Fig 2. This circuit is for an IC271H but a similar circuit would be suitable for many other radios. A low leakage 0.1 farad capacitor is used to supply the RAM memory while the radio is switched off instead of the lithium battery.

Diodes isolate the capacitor both from the 5 volt supply and the lithium battery. The capacitor is charged via D1 when the radio is turned on and the RAM memory is supplied via D2. The capacitor voltage is greater than the lithium battery voltage so the RAM memory is supplied with current by the capacitor. The diodes used were germanium switching diodes. The capacitor can supply the RAM memory for about a month.

The capacitor is a secondary backup to the RAM memory supply. Installation is carried out with the radio switched on. Some care is essential.

To cater for long periods with the radio switched off a serviceable lithium battery is required as the capacitor is only a medium term storage. However, the circuit does give you some leeway when replacing the lithium battery.

In those radios where the operating system for the CPU is stored in RAM, extreme care should be exercised both in replacing the lithium battery and with this circuit. A momentary loss of supply to the RAM would necessitate completely reprogramming the RAM. For radios where the RAM only contains information personalising the radio and an extensive set of memories, the consequences are not so severe.

The capacitor used is of a type available locally. The exact capacitance value is not critical and a value between 0.1 F and 1.0 F would be suitable. It must, however, have low leakage. Be very careful not to short out the supply to the RAM during installation. Installation should be done with the radio switched on and you should be careful. Use a soldering iron with an isolated and floating tip. An earthed soldering iron could short out the supply to the RAM which is to be avoided.

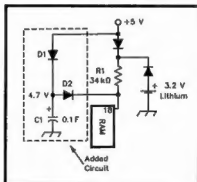


Fig 2 — RAM supply from Low Leakage High Capacity Capacitor.

Repair of VHF/UHF Output Modules

The output modules used in many VHF/UHF transceivers sometimes fail and they are very costly to replace. In *Hints and Kinks* in the November 1994 issue of *QST*, some ideas for repair of these modules are given. John Gruenwald K0BF and David Stockton GM42NX give some hope to those brave enough to attempt a repair. Such repair attempts will void any warranty and they should only be undertaken when the only other

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(Listed in Postcode order)

Below is a list of examiners accredited by the WIA Exam Service to conduct radio examinations using WIA Exam Service examination materials. The list is published in postcode order to assist candidates in finding the examiner closest to their location. This list was up-to-date as at 8 January 1995.

Accredited examiners should not only be able to provide advice and assistance in relation to examinations, but also about how to become a radio amateur, to all interested enquirers in their locality. The SMA and WIA Exam Service direct all such enquiries to accredited examiners in the area in which the enquirer lives.

Examiner	Group/Club	Address	Telephone
Aan Baker VK8ZAB	Darwin Amateur Radio Club Inc	GPO Box 1549, Darwin,	0801 089 46 6197 (BH)
Terry Hine VK8TA	Darwin Amateur Radio Club Inc	PO Box 753, Darwin,	0801 089 81 5516
Jim Jones VK6LJ	Darwin Amateur Radio Club Inc	GPO Box 3583, Darwin,	0801 089 32 4672 (AH)
Barrie Burns VK8D	Darwin Amateur Radio Club Inc	1 Kenn Pl, Rapid Creek,	0810 089 85 1068 (AH)
Trevor Connel VK8CO	Darwin Amateur Radio Club Inc	PO Box 40441, Casuarina,	0811 089 45 3373 (AH)
Ken Glasson VK8KG	Darwin Amateur Radio Club Inc	PO Box 42908, Casuarina,	0811 089 45 3653 (AH)
Spud Murphy VK8ZWM	Darwin Amateur Radio Club Inc	PO Box 386, Howard Springs,	0835 089 46 5887 (BH)
Graeme Fuller VK8DOM	Darwin Amateur Radio Club Inc	PO Box 626, Humpty Doo,	0836 089 88 2567
Jeff Farmer VK8GF	Alice Springs ARC	PO Box 2953, Alice Springs,	0871 089 52 2388 (BH)
Graham Heer VK8GR	Alice Springs ARC	PO Box 2953, Alice Springs,	0871 089 52 4536
Terry Murphy VK8TM	Alice Springs ARC	PO Box 2953, Alice Springs,	0871 089 52 5249
Richard Hand VK8AZ	Gove Amateur Radio Group	PO Box 211, Nhulunbuy,	0881 089 87 3148 (AH)
Grant Hitchcock VK2GIX	WARS Examinations	72 Vine St, Chippendale,	2008 02 319 1913 (AH)
Tony Montanari VK2GMM	WARS Examinations	PO Box 131, Watsons Bay,	2030 02 349 1745
Eric Van De Weyer VK2KUR	WARS Examinations	PO Box 131, Watsons Bay,	2030 02 318 6138 (BH)
George Voron VK2BGV	International ARC	2 Griffith Avenue, Roseville,	2069 02 417 1066
Sam Voron VK2BVS	International ARC	2 Griffith Avenue, Roseville,	2069 02 417 1066
David Bloodworth VK2WOZ	Hornsby Amateur Radio Club	24 Wambool St, Turramurra,	2074 02 44 4080 (AH)
Tony Lahacch VK2BTL	Hornsby Amateur Radio Club	26 Derby Rd, Hornsby,	2077 02 487 3383 (AH)
Graham Sommer VK2DWL	Hornsby Amateur Radio Club	PO Box 362, Hornsby,	2077 02 875 2273 (AH)
Marque Crozman VK2ZLZ	Manly-Warringah Radio Society	PO Box 186, Brookvale,	2100 02 450 2757 (AH)
Vic Joyce VK2EJJ	Manly-Warringah Radio Society	PO Box 186, Brookvale,	2100 02 971 9537
Ronald Murnane VK2SKY	Manly-Warringah Radio Society	PO Box 186, Brookvale,	2100 02 971 4431 (AH)
Chardon Vick VK2GKV	Manly-Warringah Radio Society	PO Box 186, Brookvale,	2100 02 913 3874 (AH)
Barry Gammage VK2GAM	WIA NSW Division	PO Box 1068, Parramatta,	2124 02 727 7338
Terry Rye and VK2UX	WIA NSW Division	PO Box 1068, Parramatta,	2124 02 689 2417 (BH)
Barry Goddard VK2GQD	WIA NSW Division	PO Box 220, Homebush,	2140 02 763 4111 (BH)
Garry Carter VK2TLA	WIA NSW Division	91 Sixth Ave, Berala,	2141 02 644 7448 (AH)
Jim Walker VK2KJW	WIA NSW Division	PO Box 2391, Nth Parramatta,	2151 02 683 1112 (AH)
Bob Girdo VK2RG		13 Ins St, Sefton,	2162 02 743 7555 (AH)
Miles Burkitt VK2GQJ	Miles Communications P/L	1 Conrad St, Wetherill Park,	2164 02 727 7339 (AH)
Glen Strikaj VK2APU		50 Curtin St, Cabramatta,	2168 02 726 8135 (AH)
Vic Robinson VK2IVR	Fishers Ghost ARC	1 Bon St, Chipping Norton,	2170 02 602 1398 (AH)
Hoss Bernhard VK2ICE	Fishers Ghost ARC	PO Box 34, Catherine Field,	2171 046 26 3839 (AH)
Wayne Black VK2WDL	Bankstown Amateur Radio Club	54 Hillard St, Wiley Park,	2195 02 743 8417 (BH)
Stephen Porter VK2BU		43 West Botany St, Arncliffe,	2205 02 567 7590 (AH)
Stewart McCarthy VK2MX	St George ARS Inc	PO Box 530, Engadine,	2233 02 520 8662 (AH)
Barry McKee VK2FP	Sydney Amateur Television Gp	3 Bella Vista St, Heathcote,	2233 02 520 2867 (BH)
Pau Smith VK2ZSA	St George ARS Inc	PO Box 530, Engadine,	2233 02 520 7323 (AH)
Tom Thornton VK2CT	St George ARS Inc	PO Box 530, Engadine,	2233 02 520 5843
Ean Young VK2FSO	St George ARS Inc	PO Box 530, Engadine,	2233 02 580 5329 (AH)
Leon Brett VK2BLV	Central Coast ARC Inc	87 Albany St, East Gosford,	2250 043 24 1649
Bruce Holland VK2ZAD	Central Coast ARC Inc	12 Greenoaks Rd, Narara,	2250 043 28 3148 (AH)
Len McNab VK2ABD	Central Coast ARC Inc	1 Shortland St, Gosford,	2250 043 25 2860 (AH)
Bill Scovel VK2FKE	Central Coast ARC Inc	13 Tulani Ave, Daleys Point,	2257 043 43 2339
Peter King VK2GPK	Southlakes Computers	6 Macnamr Close, Morisset,	2264 049 73 3688 (AH)
Jim Wong VK2GTD		10 Victory Street, Cooranbong,	2265 049 77 1507 (AH)
Peter Browne VK2GFE		PO Box 77, Warners Bay,	2282 049 58 2832 (AH)
Maurice Jones VK2CO	Newcastle Area WICEN	PO Box 77, Warners Bay,	2282 049 49 8786
Fred Lawler VK2SI	Westlakes Amateur Radio Club	PO Box 77, Warners Bay,	2282 049 64 8018 (BH)
Paul Lorentzen VK2ATR	Westlakes Amateur Radio Club	PO Box 77, Warners Bay,	2282 049 54 9488 (BH)
Greg Smith VK2CW	Westlakes Amateur Radio Club	PO Box 77, Warners Bay,	2282 049 41 3468 (BH)
Frederick Eade VK2AEE	Frederick William Eade	276 Park Ave, Kotara,	2289 049 57 5131
Rudy Meszma VK2FIM		1/6 Ida St, Charlestown,	2290 049 43 7548
Geoff McGrorey Clark VK2JUG	Newcastle/District Packet RG	PO Box 76, Medowie,	2318 018 66 7162 (BH)
David Hryckewicz VK2WDH		30 Lerra Rd, Windella Downs,	2320 049 30 7663

Examiner	Group/Club	Address	Telephone
George Hombsch VK2FCC	Tamworth Radio Club Inc	PO Box 4, Tamworth,	2340
Neville Pratt VK2FNP	Tamworth Radio Club Inc	PO Box 4, Tamworth,	2340
Al an Walker VK2ZJW	Tamworth Radio Club Inc	PO Box 4, Tamworth,	2340
Va. Birks VK2TB	Armidale & District ARC	Lot 79 Invergowie Rd, MSF 2002 Armidale,	2350
Roger Chubb VK2FGE	Armidale & District ARC	21 Tancred St, Armidale,	2350
Shane Rae VK2RRR		73 Cowper St, Wee Waa,	2388
Brent Paul VK2PB		18 Boundary St, Narrabri,	2390
Trent Sampson VK2KTS		PO Box 1440, Moree,	2400
Dick Andrew VK2GRA	Taree Amateur Radio Club	RMB 110 Old Lansdowne Rd, Cundletown,	2430
Karl Bilger VK2DYX	Taree Amateur Radio Club	Lot 187 Allumba Ct, Taree,	2430
Dick Zinic VK2BOT	Taree Amateur Radio Club	RMB 100 Old Lansdowne Rd, Cundletown,	2430
Keith Hanlon	Oxley Region ARC	PO Box 712, Port Macquarie,	2444
Larry Lindsay VK2CLL	Oxley Region ARC	PO Box 712, Port Macquarie,	2444
B I I Stofmeel VK2WST	Oxley Region ARC	PO Box 712, Port Macquarie,	2444
Trevor Thatcher VK2TT	Oxley Region ARC	PO Box 712, Port Macquarie,	2444
Bob Colse VK2AWA	Coffs Harbour & District ARC	3/17 Bonville St, Coffs Harbour,	2450
Peter McAdam VK2EVB	Coffs Harbour & District ARC	PO Box 655, Coffs Harbour,	2450
Hans Schumacher VK2DGV	Coffs Harbour & District ARC	PO Box 655, Coffs Harbour,	2450
John Williams VK2BUI	Coffs Harbour & District ARC	PO Box 655, Coffs Harbour,	2450
Gerry Cresswell VK2IGC	Summerland Amateur Radio Club	PO Box 524, Lismore,	2480
Kerlene Foster VK2VKT	Summerland Amateur Radio Club	PO Box 524, Lismore,	2480
Ken Hore VK2HE	Summerland Amateur Radio Club	PO Box 524, Lismore,	2480
Leith Martin VK2EA	Summerland Amateur Radio Club	PO Box 524, Lismore,	2480
Peter Richens VK2FSD	Summerland Amateur Radio Club	PO Box 91, Lismore Heights,	2480
John To and VK2XKX	Summerland Amateur Radio Club	101 College St, Lismore,	2480
Rick Virtue VK2EJV	Summerland Amateur Radio Club	90-92 James St, Dunoon,	2480
Errol Chitlick VK2EGC	Tweed Valley ARC	49 Reserve Creek Rd, Kialvale,	2484
Lloyd Martin VK2BYU	Tweed Valley ARC	16 Elouera Tce, Bray Park v Murrumbidgee,	2484
Phil Evans VK2KEV	Tweed Valley ARC	Drafters Van Village, 96 WomminBay Rd Chinderah,	2487
Graham Denney VK2GID	Illawarra ARS Inc	22A Macquarie St, Wollongong,	2500
Jim Hayes VK2EJH		1 Kathleen Cres, Woonona,	2517
M ke Kesch VK2DFK		54 Park Rd, Woonona,	2517
Barry Sullivan VK2BZ		20 Narelle Cres, Woonona,	2517
Ken Goodhead VK2TKE		3 Hendricks Pde, Mt Warrigal,	2528
Darrel Nairson VK2USA	Illawarra ARS Inc	PO Box 341, Dapto,	2530
Rolly Brown VK2GFO	Mid South Coast ARC Inc	8 Cheddar St, Moruya,	2537
Derek Holyoake VK2DRK	Mid South Coast ARC Inc	166 Hector McWilliam Ave, Tuross Head,	2537
Frank Hill VK2HQ	Mid South Coast ARC Inc	PO Box 113, Milton,	2538
Stan Bourke VK2EL	Mid South Coast ARC Inc	49 Parson St, Ulladulla,	2539
Peter Madden VK2XXS		55 Matron Porter Dve, Narrawallee Beach,	2539
Dave Perry VK2CDP	Mid South Coast ARC Inc	49 Garside Rd, Mollismook,	2539
Jennifer Cox		41 King George St, Callala Beach,	2540
David Blunn VK2DDJ	Shoalhaven Amateur Radio Club	PO Box 230, Nowra,	2541
John Bogdanski VK2FEX	Shoalhaven Amateur Radio Club	PO Box 230, Nowra,	2541
James O'Brien VK2BHU	Far South Coast ARC	PO Box 686, Bega,	2550
David Plumb VK2DRP	Far South Coast ARC	PO Box 686, Bega,	2550
Robert Demkw VK2ENU		18 Ettalong Place, Woodbine,	2560
B4 Gentle VK2WET	Fishers Ghost ARC	8 Raymond Ave, Campbelltown,	2560
Les Simmons VK2TJ	Fishers Ghost ARC	8 Raymond Ave, Campbelltown,	2560
Michael Turner VK2WMT	Bankstown Amateur Radio Club	PO Box 375, Ingleburn,	2565
Dennis Peake VK2ADW		29 Wattle St, Colo Vale,	2575
Ian Jeffrey VK2AJJ	Goulburn Amateur Radio Soc	144 Kinghorn St, Goulburn,	2580
Alex Thuma VK2ATY	Goulburn Amateur Radio Soc	26 William St, Goulburn,	2580
Neil Pickford VK1KNP	WIA ACT Division	GPO Box 600, Canberra,	2601
Mal Cooper VK1MC		PO Box 652, Jamison,	2604
Nev I Eyre VK1NE	Tidbinbilla ARC	PO Box 4350, Kingston,	2604
Bob Quick VK1ZQR	Tidbinbilla ARC	PO Box 4350, Kingston,	2604
Len Ricardo VK1ALR	Tidbinbilla ARC	PO Box 4350, Kingston,	2604
Christopher Davis VK1DO	WIA ACT Division	123 Hawkesbury Cres, Farrer,	2607
Rob Apathy VK1KRA	WIA ACT Division	5 Winton St, Latham,	2615
Alan James VK2ACN	Twin Cities R & E Club Inc	PO Box 396, Albury,	2640
Greg Sargeant VK2EXA	Twin Cities R & E Club Inc	PO Box 396, Albury,	2640
Graeme Scott VK2KE	Twin Cities R & E Club Inc	PO Box 396, Albury,	2640
David Ashley VK2NKK	Wagga Amateur Radio Club Inc	PO Box 294, Wagga Wagga,	2650
John Eyles VK2BXD	Wagga Amateur Radio Club Inc	PO Box 294, Wagga Wagga,	2650
Leon Boneham VK2DLN	Griffith ARC Inc	PO Box 1804, Griffith,	2680
Graeme Watkins VK2DGV	Griffith ARC Inc	PO Box 1016, Griffith,	2680
Don Smith VK2BDU		34 Fowler St, Deniliquin,	2710
John Goodall VK2ESP		RMB 850, Moama,	2731
Eric Fossey VK2EFY	Blue Mountains ARC	45 Gascoigne St, Penrith,	2750
Garry Cottle VK2AGC		SGTS Mess, RAAF Base, Richmond,	2755
Pixie Chapple VK2KPC	Blue Mountains ARC	231 Shepherd St, St Marys,	2760

Examiner	Group/Club	Address	Telephone
Brett Hazell VK2CBH	Chifley Amateur Radio Club	PO Box 290, Mt Druitt,	2770 02 671 2035 (AH)
Leon McHugh VK2FL	Chifley Amateur Radio Club	PO Box 290, Mt Druitt,	2770 02 625 9646
Ralph Simmons VK2GRS	Chifley Amateur Radio Club	PO Box 290, Mt Druitt,	2770 02 671 4756
Perce Garbutt VK2GAI		10 Tygh St, Lapsstone,	2773 047 39 3886
David Barry VK2CFB	Blue Mountains ARC	6 Murray Ave, Springwood,	2777 047 51 5775
Les Gaborit VK2LW	Blue Mountains ARC	347 Macquarie Rd, Springwood,	2777 047 51 4767
Julie Keniwe VK2XBR	Sydney Amateur Television Gp	34 Raymond Rd, Springwood,	2777 047 51 1219
Alan Whitmore VK2YYJ		32 Greens Pde, Valley Heights,	2777 02 839 1388 (BH)
Adrian Clout VK2BFN		137 Lower Valley Rd, Hazelbrook,	2779 047 58 8797
John Dudley VK2GXZ		PO Box 52, Hazelbrook,	2779 047 58 6131 (BH)
Dave Harding VK2AF	Blue Mountains ARC	91 Hall Pde, Hazelbrook,	2779 047 58 8022 (AH)
Peter Van Gemert VK2ALL	Bathurst Amateur Radio Club	291 Durham St, Bathurst,	2795 063 31 2464
Neville Wilde VK2DR	Bathurst Amateur Radio Club	22 White St, Bathurst,	2795 063 31 5809 (AH)
Bruce Carroll VK2DEQ	Orange Amateur Radio Exams	PO Box 128, Orange,	2800 063 62 8703
Peter Carter VK2ETK	Orange Amateur Radio Exams	7 Ophir Rd, Orange,	2800 063 61 3439 (AH)
Frank Wall VK2CWL	Orana Amateur Radio Club	"Westbrook", Narramine,	2821 068 89 0535
David Walters VK2AYO	Orana Amateur Radio Club	"Carramar" Burraway Rd, Dubbe MS 4,	2830 068 88 5265
Roy Counsell		PO Box 540, Lightning Ridge,	2834 068 29 0511
Phil Roberts		38 Neillston Dve, Lightning Ridge,	2834 068 29 0511
Ken Westerman VK2AGW		Coromandel, Dunedoo,	2844 063 75 1347
Walter Field VK2NNF	Parkes & District ARC Inc	C/- 4 William St, Parkes,	2870 068 62 1776
Dave Kent VK2BJI	Parkes & District ARC Inc	PO Box 564, Parkes,	2870 068 62 2154
Lindsay Richmond VK1NDM	Tidbinbilla Tracking Station	21 Buckley Cct, Kambeh,	2902 06 231 4182 (AH)
Jan Burrell VK1BR	WIA ACT Division	20 Currey St, Gowerie,	2904 06 292 5477 (AH)
Ross Peters VK1DZ	Tidbinbilla Tracking Station	14 Mehaffey Cres, Theodore,	2905 03 680 4455 (BH)
John Bevern VK3CMQ	RMIT School of Electrotech	GPO Box 2476V, Melbourne,	3001 03 601 4203 (BH)
Graham Cottew VK3DPC	ARA Exam Service	GPO Box 628E, Melbourne,	3001 03 601 4203 (BH)
Chris Edmondson VK3YID	ARA Exam Service	GPO Box 628E, Melbourne,	3001 03 601 4203 (BH)
Graham Judge VK3YJG	ARA Exam Service	GPO Box 628E, Melbourne,	3001 03 601 4203 (BH)
Ralph Parkhurst VK3LL	ARA Exam Service	GPO Box 628E, Melbourne,	3001 03 601 4203 (BH)
Rob Whitmore VK3ESE	RMIT School of Electrotech	GPO Box 2476V, Melbourne,	3001 03 680 4479 (BH)
Peter Willmott VK3TG	RAAF Williams ARC	PO Box 187, Sunshine,	3020 03 964 8663
Alan Foulstone VK3ECZ	RAAF Williams ARC	PO Box 161, Laverton,	3028 03 968 3600
Jumbo Kennedy VK3BG	RAAF Williams ARC	26 Tarnet Rd, Werribee,	3030 03 741 2856
Dixie Lee VK7HP	RAAF Williams ARC	26 Church St, Werribee,	3030 03 742 3786
Joe Aprile VK3GFA		19 Scotia St, Moonee Ponds,	3039 03 770 7687
Tony Bitternigh VK3TSZ		88 Newlands Rd, Coburg,	3058 03 354 6395 (AH)
Les Cardini VK3BLC	RMIT School of Electrotech	PO Box 418, Craigburn,	3064 03 305 8297 (AH)
John Wright VK3AJL	J Wright & Associates	72 Ramsden St, Clifton Hill,	3068 03 854 5411 (BH)
Kevin Gilbert	Xavier College Radio Club	59 Hawthorn Rd, Northcote,	3070 03 489 0817 (AH)
Pino Gessa VK3WL		184 Clarke St, Northcote,	3070 03 489 9732 (AH)
Bernie Neumann VK3AXL	Xavier College Radio Club	59 Hawthorn Rd, Northcote,	3070 03 489 9732 (AH)
Harry Petrosdaskakis VK3ABO		PO Box 225, Northcote,	3070 03 487 1253 (AH)
Jim Baxter VK3DBO	NERG Exams	1 Pamela Crt, Bundoora,	3083 03 467 2697
Graham Gail VK3ZS	NERG Exams	77 Greenwood Dve Bundoora,	3088 03 434 3687
Gary Greer VK3KBL	NERG Exams	54 Corowa Cres, Greensborough,	3088 03 322 6104 (BH)
Chris McLaughlin VK3CHR	NERG Exams	18 Selsdon Crt, Greensborough,	3088 03 434 6071 (AH)
Ewan Templeton VK3BMV	NERG Exams	45 Cairns St, Greensborough,	3088 03 634 5532 (BH)
Greg Williams VK3VT	NERG Exams	1 Moorabill Crt, Greensborough,	3103 03 899 8649 (AH)
Harry Lodder VK3AXJ	Cammerwell Grammar Radio Club	PO Box 151, Balwyn,	3127 03 438 3013 (AH)
Des Bird VK3EDB	Electrotechnology RMIT	217 Lambourne St, Surrey Hills,	3127 03 848 3580
Phil Adams VK3JN	Scout R & E Service Unit	PO Box 311, Box Hill,	3128 03 890 2117 (AH)
Len Attyeo VK3DXM	Scout R & E Service Unit	PO Box 311, Box Hill,	3128 03 895 9617 (AH)
Craig Cook VK3CMC	RMIT School of Electrotech	33 Haig St, Box Hill South,	3128 03 791 7988 (BH)
Peter Fraser VK3ZPF	Scout R & E Service Unit	PO Box 311, Box Hill,	3128 03 873 2459 (AH)
Rob Carmichael VK3DTR		PO Box 200, Forest Hill,	3131 03 729 8579 (AH)
Jim Linton VK3PC		PO Box 200, Forest Hill,	3131 03 802 7492 (AH)
Geoff Atkinson VK3YFA	EMDRC	PO Box 87, Mitcham,	3132 03 808 5350 (AH)
Jack Bramham VK3WWW	EMDRC	PO Box 87, Mitcham,	3132 03 726 7700
Joe Magee VK3BKl	EMDRC	PO Box 87, Mitcham,	3132 03 583 7692 (AH)
Dave Neville VK3UC	EMDRC	PO Box 87, Mitcham,	3132 03 546 9615 (AH)
Len Vermeulen VK3COD	EMDRC	PO Box 87, Mitcham,	3132 03 551 5635
John Bodwell VK3EHZ	EMDRC	49 Winyard Dve, Mooroolbark,	3177 018 99 1982 (BH)
Mark Diggins VK3JMD		134 Howard Rd, Dingley,	3172 03 556 9600 (BH)
Warren Inglis VK3DWI	Moorabbin & District RC Inc	31 Ealing Cres, Springvale Sth,	3172 03 556 9600 (BH)
Craig McMillan VK3CRA	VK3CRA Amateur Exams	5 Sunview Crt, Dingley,	3172 03 592 7536
Ross Northmore VK3BRN		35 Oak Ave, Doveton,	3177 03 704 6355 (AH)
Frank Robinson VK3DDK		PO Box 173, Prahran,	3181 03 556 9600 (BH)
Keth Forbes VK3ENR	Moorabbin College of TAFE	Private Bag 19, Moorabbin,	3189 03 556 9600 (BH)
Roderick Wall VK3BKO	Moorabbin College of TAFE	Private Bag 19, Moorabbin,	3189 03 556 9600 (BH)
Brian Faless VK3ES	Moorabbin & District RC Inc	PO Box 58, Highett,	3190 03 592 7536
Jerry Viscaal VK3MQ	Moorabbin & District RC Inc	PO Box 58, Highett,	3190 03 704 6355 (AH)

Examiner	Group/Club	Address	Telephone
Brett Leslie VK3JHP		3/4-6 Oswald St, Cheltenham,	3192
Shirley Johnson VK3NKA	FAMPARC	54 Scotch Pde, Bonbeach,	3196
Gordon Buchanan VK3BGB	FAMPARC	PO Box 38, Frankston,	3199
Jessie Buchanan VK3VAN	FAMPARC	4 Millford Cres, Karingal,	3199
Audrey Gibson VK3YVW		94 Kars St, Frankston,	3199
Len Gibson VK3SI		94 Kars St, Frankston,	3199
Peter Johnson VK3CPJ	FAMPARC	PO Box 38, Frankston,	3199
Graham Wallington VK3GEW	FAMPARC	13 Millford Cres, Frankston,	3199
Ian Stowe VK3GA	FAMPARC	20 Norfolk Cres, Frankston North,	3200
Barry Watts VK3BRW	Only Tomorrow	36 Mountain St, South Melbourne,	3205
Valene Watts VK3CVW	Only Tomorrow	36 Mountain St, South Melbourne,	3205
Chas Gnacour VK3BRZ	Geelong Amateur Radio Club	6 Smeaton Close, Lara,	3212
Bruce Kenda VK3WL	RAAF Williams ARC	33 Rennie St, Lara,	3212
John Collins VK3TKH	Geelong Amateur Radio Club	22 Elinbank Dve, Grovedale,	3216
Keith Vries VK3AFI	Geelong Amateur Radio Club	204 Myers St, Geelong,	3220
Lee de Vries VK3PK	Geelong Amateur Radio Club	215 Swan Bay Rd, Wallington,	3221
Maggie Iaco VK3CFI	Coast Amateur Radio Club	PO Box 3, Cororooke,	3254
B.I. Be VK3WK	Warrnambool R & E Club	PO Box 724, Warrnambool,	3280
B.I. Dennis VK3XE	Warrnambool R & E Club	5 Karana Dve, Warrnambool,	3280
Ian Durston VK3VID	Warrnambool R & E Club	5 Fairmont Ave, Warrnambool,	3280
Joe Morgan VK3CDX	Warrnambool R & E Club	44 Mervale Dve, Warrnambool,	3280
Mona Swinton VK3BRE	Warrnambool R & E Club	PO Box 724, Warrnambool,	3280
Trevor Dyson VK3DTV	Warrnambool R & E Club	RMB 5280, Yambuk,	3285
Ian Mason VK3DNQ	Warrnambool R & E Club	PO Box 10, Yambuk,	3285
Harold Benson VK3VX	Hamilton & District RC	PO Box 188, Hamilton,	3300
Steve Curtis VK3CAX	Hamilton & District RC	PO Box 188, Hamilton,	3300
Ray Downes VK3ERD	Hamilton & District RC	PO Box 188, Hamilton,	3300
Keith Freemerk VK3AIH	Hamilton & District RC	PO Box 188, Hamilton,	3300
Ian Wyndham VK3EF	BARG	317 Eureka St, Ballarat,	3350
Reg Carter VK3CAZ	BARG	PO Box 1261, MC Ballarat,	3354
Gordon Cornell VK3FGC	BARG	PO Box 1261, MC Ballarat,	3354
Tom George VK3DMK	BARG	PO Box 1261, MC Ballarat,	3354
Ian McDonald VK3AXH	BARG	PO Box 1261, MC Ballarat,	3354
Geoff Smith VK3ADB	BARG	PO Box 1249, MC Ballarat,	3354
Charlie Stewart VK3DCS	BARG	PO Box 1261, MC Ballarat,	3354
Bob Terrill VK3BNC	BARG	7 Locksley St, Wendouree,	3355
Eric Froude VK3FRO	BARG	Post Office, Linton,	3360
James Glenn VK3AIG		30 Olinda St, Beaufort,	3373
Dave Ward VK3PUG	Horsham Amateur Radio Club	PO Box 720, Horsham,	3400
Ady Squares VK3DOTO	Horsham Amateur Radio Club	PO Box 720, Horsham,	3401
David Triggs VK3YLV	Horsham Amateur Radio Club	PO Box 720, Horsham,	3401
Mark Weaver VK3KZZ	Horsham Amateur Radio Club	PO Box 720, Horsham,	3401
Leon Reichelt VK3KIT		PO Box 654, Horsham,	3402
Wayly Maxwell VK3MJW	Sunbury ARC Inc	20 Kentore Close, Sunbury,	3429
Ian Morris VK3DOV	Sunbury ARC Inc	PO Box 915, Sunbury,	3429
Craig Norris VK3TCH	Sunbury ARC Inc	PO Box 915, Sunbury,	3429
John Nunan VK3IC	Sunbury ARC Inc	PO Box 915, Sunbury,	3429
Judy Atkins VK3AGC		"Taralea Park", Old Drummond Rd Taradale,	3447
Ron Atkins VK3BYM		Old Drummond Rd, Taradale,	3447
Den s Charlesworth VK3DWC		Majorca Rd, Cansbrook,	3464
Peter Rafferty VK3ITI		49 Majorca Rd, Maryborough,	3465
Allan Greening VK3PA		PO Box 67, Dumolly,	3472
Terry Bunting	Sunraysia Amateur Exams	PO Box 30, Mildura,	3502
Maureen Van VK3CWB	Sunraysia Amateur Exams	PO Box 30, Mildura,	3502
Peter Milne VK3PM	Sunraysia Amateur Exams	PO Box 30, Mildura,	3502
Wally Cameron VK3WMC	Midland ARC Inc	166 McKenzie Street West, Golden Square,	3555
Ray Taylor VK3FQ		Tandara Rd, Tandara,	3571
Rex James VK3OF	Swan Hill & District ARC	PO Box 682, Swan Hill,	3585
Daryl Manley VK3AMJ	Swan Hill & District ARC	PO Box 682, Swan Hill,	3585
Dave Duff VK3JRA	Goulburn Valley Digital ARC	6 Yarramundi Crt, Murchison,	3610
Wayne Colyer VK3XQA	Shepparton & District ARC	PO Box 682, Shepparton,	3630
Roger Conway VK3ACC	Goulburn Valley Digital ARC	PO Box 1878, Shepparton,	3630
Barrie Halliday VK3KBY	Shepparton & District ARC	37 Gourlay St, Shepparton,	3630
Peter O'Keefe VK3YF	Shepparton & District ARC	PO Box 654, Shepparton,	3630
David Waring VK3ANP	Wangaratta College of TAFE	Banksdale Rd, Hansomville,	3675
Bruce Riley VK3ZSR	Wangaratta College of TAFE	16 Phillipson St, Wangaratta,	3677
Reg Jones VK3GC	Wodonga TAFE Electronics Dept,	15 McKay St Wodonga,	3690
Michael Greenall	Army College of TAFE	Radio Trades Latchford Bk, Milpo Boregilla,	3693
Ian McInnes VK2XXW	Army College of TAFE	Radio Trades Latchford Bk, Milpo Boregilla,	3693
Malcolm McRae VK3BXJ	Army College of TAFE	Radio Trade Wing, Latchford Milpo Boregilla,	3693
Peter O'Bryan VK3MU		PO Box 180, Yarrowonga,	3730
Hilton Younger VK3AHY		10 Witt St, Yarrowonga,	3730

Examiner	Group/Club	Address	Telephone
Derek Thurgood VK3DD	Healesville ARG Inc	PO Box 234, Yarra Glenn,	3775 03 730 1557 (AH)
Phil Hingley VK3N	Healesville ARG Inc	27 Westmont Rd, Healesville,	3777 059 62 2832
Bert Matthes VK3MGU	Healesville ARG Inc	16 Hillcrest Gve, Healesville,	3777 059 62 4950
Graeme Tremellen VK3GPT	Healesville ARG Inc	PO Box 285, Healesville,	3777 059 62 6098
Gavin Hobbs VK3T.N	Healesville ARG Inc	PO Box 105, Cockatoo,	3781 059 68 8482
John Hill VK3WZ		6 Cumberland Way, Endeavour Hills,	3802 03 700 5428
Graeme Brown VK3BXG	VK3 Eastern Zone Education	RMB 8375 Pryor Rd, Drouin,	3818 056 23 1227 (B-H)
Col n Dyason VK3PJ	VK3 Eastern Zone Education	66 Colquhoun Blvd, Warragul,	3820 056 23 4655 (B-H)
Bernard Herne VK3YTT	VK3 Eastern Zone Education	12 Ash St, Monwell,	3840 051 34 4275 (AH)
Peter Freeman VK3KA	VK3 Eastern Zone Education	PO Box 273, Churchill,	3842 051 22 2550 (AH)
Henk Plieters VK3CAQ	VK3 Eastern Zone Education	PO Box 65, Churchill,	3842 051 22 1885 (A-H)
Brian Yeung VK3B8B	East Gippsland ARC Inc	48 Washington St, Traralgon,	3844 051 76 1167
Patrick Bond VK3GEE		PO Box 87, Rosedale,	3847 051 99 2811
Kevin McGrath VK3EOM	East Gippsland ARC	12 Government Rd, Paynesville,	3880 051 56 6938
Bob Neal VK3ZAN	East Gippsland ARC	76 Langford Pde, Paynesville,	3880 051 56 7654
John Pavesan VK3GU	East Gippsland ARC	15 Gilsenan St, Paynesville,	3880 051 56 8110
Bob Dickinson VK3BLD		94 Dunlop St, Bittern,	3918 058 83 3162
Frank Feldman VK3BC	Southern Peninsula Radio Club	30 Armstrong Rd, McCrae,	3938 059 85 2031
V c Vickery VK3DEA	Southern Peninsula Radio Club	11 Flamingo Rd, Rosebud West,	3940 059 86 1237
Aan Robinson VK3SQ	Southern Peninsula Radio Club	16 Althea Crt, Rye,	3941 059 85 8213
Barry Wilton VK3XV		PO Box 260, Cranbourne,	3977 056 72 2563
Lindsay Allen VK3LFA	Community D/L Wonthaggi Inc	13 Epsom St, Wonthaggi,	3985 056 72 3144
Col n Thomson VK3VBU	Community D/L Wonthaggi Inc	59 Anglers Rd, Cape Paterson,	3985 056 72 2307
Ted Trinder VK3JMT	Community D/L Wonthaggi Inc	1 Campbell St, Wonthaggi,	3985 056 72 2307
Patricia Raven VK4PT	QRV Exam Service	22 David St, Toombul,	4012 07 266 6197
Ted Raven VK4EWR	QRV Exam Service	22 David St, Toombul,	4012 07 266 6197
Bob Godfrey VK4BOB	Department of Education QLD	20 Buckra St, Bracken Ridge,	4017 07 266 5380 (AH)
Rodger Bingham VK4HD	Redcliffe Radio Club	PO Box 20, Woody Point,	4019 074 96 4553
Ngel Marsh VK4EEE	Redcliffe Radio Club	PO Box 20, Woody Point,	4019 07 283 1329 (AH)
John Prasotto VK4WX	Redcliffe Radio Club	PO Box 20, Woody Point,	4019 07 284 8859 (AH)
Laure Prichard VK4BL	Redcliffe Radio Club	PO Box 20, Woody Point,	4019 074 95 5794
Mark van Laecke VK4VG	Redcliffe Radio Club	PO Box 20, Woody Point,	4019 07 265 3104
Bob Neville VK4AC	QRV Exam Service	124 Roscommon Rd, Boondall,	4034 07 264 1655
Richard Ettinger VK4DIC	QRV Exam Service	12 Strathford Ave, Albany Creek,	4035 07 355 4308 (AH)
Ron Everingham VK4EV	Brisbane ARC 30	Hunter St, Everton Park,	4053 07 379 6341
Charles Ivin VK4DK	Pelican Examinations	9 Persimmon St, Ferny Grove,	4055 07 279 0278
Don Johnson VK4DS	Brisbane ARC	12 Jarrott St, Chelmer,	4074 07 379 3307
Garry Hawgood VK4KE	Radio Amateurs Group	9 Ararat St, Ravenhill,	4074 07 849 8156
Murray Kelly VK4ACK	WIAQ Examinations Service	29 Molonga St, Graceville,	4075 07 848 2456
Steve Vaughan VK4YEK	Brisbane ARC	PO Box 300, Darra,	4078 07 848 6081 (A-H)
George Nelson VK4WZ	Brisbane ARC	96 Elukin Rd, Annerley,	4103 07 273 8946
Greg G Grady VK4TUX	Department of Education QLD	33 Koala Rd, Moorooka,	4105 07 809 2778 (A-H)
Ron Lewis VK4ZRL		12 Frelight St, Sunnybank Hills,	4109 07 800 3305 (A-H)
Peter Harding VK4JPH		40 Centaurus Cres, Regents Park,	4118 07 809 2778 (A-H)
Brian Knowles VK4CBK		4 Glen St, Browns Plains,	4118 07 394 2555 (B-H)
Roy O Maey VK4ZQ	WIAQ Examinations Service	Emtronics P/L 633 Logan R, Greenslopes,	4120 07 398 6013 (AH)
Keith Griffin VK4O	Bayside District ARS Inc	20 Kordick St, Carna,	4152 07 824 1518 (AH)
Ian Campbell VK4TK	Bayside District ARS Inc	PO Box 411, Capalaba,	4157 07 245 5432 (A-H)
Cathie Cooper VK4FG	Bayside District ARS Inc	PO Box 411, Capalaba,	4157 07 396 1655
Roy Mahoney VK4BAY	Bayside District ARS Inc	PO Box 411, Capalaba,	4157 07 206 7298 (A-H)
George Roberts VK4BSH	Bayside District ARS Inc	PO Box 411, Capalaba,	4157 07 209 9365 (A-H)
Dennis Waugh VK4ALL	Bayside District ARS Inc	PO Box 411, Capalaba,	4157 07 207 3627 (A-H)
An Perens VK4Y P	WIAQ Examinations Service	15 Juanita St, Birkdale,	4159 07 286 4730
Jim Cunningham VK4BS	Bayside District ARS Inc	3 St Helena Crt, Cleveland,	4163 07 396 6099 (A-H)
Nic Chantler VK4DIT	Gold Coast ARS Inc	PO Box 6620, Gold Coast Mail Centre,	4217 075 39 6609 (A-H)
Robert White VK4TRW	Gold Coast ARS Inc	5 McCubbin Crt, Burleigh Heads,	4220 075 35 2222 (AH)
George Walters VK4GEW	Gold Coast ARS Inc	64 Bateke Rd, Mt Tamborine,	4272 075 45 2148
Bob Unskat VK4ALI	Ipswich & District ARC	5 Cypress St, Loamee,	4305 07 288 3321
Greg Walker VK4TDR	Ipswich & District ARC	48 Siemon St, One Mile,	4305 07 281 1370 (AH)
Denis Bill VK4XDB	Ipswich & District ARC	43 Coal Rd, Chuwar,	4308 07 281 8658
Nell Faulkner VK4ANF		Lot 367 Mt Crosby Rd, Mt Crosby,	4308 07 201 0956
Peter Ormerod VK4CPW		PO Box 114, Amberley,	4308 (BH)
John Tucker VK4WJT	Dalby & District ARC	Post Office, Blackbutt,	4308 071 63 0789
Ma Beck	Concordia College Toowoomba	154 Stephen St, Toowoomba,	4350 076 36 1700 (BH)
Graham Weier VK4ACN		C/- 58 Water St, Toowoomba,	4350 076 39 2219 (BH)
C F Jenkins VK4QJ		"Weer Heer" MS 1073, Crows Nest,	4355 076 98 1223
John Moulder VK4QJ	Cunningham Radio Club	PO Box 323, Warwick,	4370 076 61 3131 (BH)
Graham M. head VK4WEM	Cunningham Radio Club	23 Cunningham St, Warwick,	4370 076 61 4602
Karin Hunt ng VK4HL		32 Matthew St, Stanthorpe,	4380 078 81 2083 (BH)
Graham Rayner VK4GDR	Cunningham Radio Club	PO Box 93, Glen Aplin,	4381 078 83 4336 (AH)
Reg Kerstave VK4AQL	Dalby & District ARC	88 Patrick St, Dalby,	4405 076 62 2193
Margaret Schwenn VK4AOE	Dalby & District ARC	"Rosedale" MS 902, Dalby,	4405 076 62 3934

Examiner	Group/Club		Telephone
David Jones VK4OF	WIAQ Examinations Service	18 Browning Crt, Strathpine,	4500 07 205 1561
Bill McDermott VK4AZM	WIAQ Examinations Service	8 Panorama St, Bray Park,	4500 07 260 1366 (BH)
Nay Mills VK4KOP	WIAQ Examinations Service	49 Viscount St, Bray Park,	4500 07 205 4532 (AH)
Bill Yates VK4YWY	QRV Exam Service	29 Britanni St, Petrie,	4502 07 285 1462 (BH)
Brian Berry VK4BDB	WIAQ Examinations Service	42 Laver St, Morayfield,	4506 07 98 5754 (Ah)
Charlie Strong VK4YZ	Redcliffe Radio Club	St M's Old Toorbul Pt Rd, Caboolture,	4510 07 95 1565
Ken Hanby VK4IS	Sunshine Coast ARC	17 Kig Hts 14 Queen St, Caloundra,	4551 07 91 5532
Max Vincent VK4ZMV		PO Box 10, Golden Beach,	4551 07 92 2710
Mike Mallett VK4CCA	Sunshine Coast ARC	4 Seaview Crt, Maroochydore,	4558 07 79 1076
Ron Marschke VK4DFC	Sunshine Coast ARC	759-769 Diddillibah Rd, MS1536 Nambour,	4560 07 48 4063
Jacq Cornes VK4VAH	Gympie Amateur Radio Club Inc	43 Mellor St, Gympie,	4570 07 82 2443
Ian Parkinson VK4KUP	Gympie Amateur Radio Club Inc	PO Box 845, Gympie,	4570 07 82 2466 (AH)
Fran Walker VK4NSN	Gympie Amateur Radio Club Inc	86 Noosa Rd, Gympie,	4570 07 82 5325
Roy Winchester VK4IRW	Gympie Amateur Radio Club Inc	Lot 4 Jeremy Rd, Gympie,	4570 07 82 7823
Ron Macnamara VK4ESC	Sunshine Coast ARC	23 Callinis Cres, Marcus Beach,	4573 07 48 1886
John Mahoney VK4JON	Gympie ARC	23 Oyster Pde, Tin Can Bay,	4580
Bob Harper VK4KHV		4 Buckingham St, Kangeroy,	4610
Geoff Hosking VK4ZGH		4 Buckingham St, Kangeroy,	4610 071 82 5824
Ian Mowat VK4ZS		MS 648, Yarraman,	4614 071 63 8261
Trevor Clement VK4YH		14 Gapps St, Nanango,	4615 071 63 2565
Niel Cunningham VK4JX	Hervey Bay ARC	PO Box 178, Torquay,	4655
Gerry Fulton VK4GJ	Hervey Bay Amateur Radio Club	PO Box 829, Hervey Bay,	4655 071 26 3232
Geoff Stephenson VK4BTU	Hervey Bay ARC	14 Windsor Way, Pilsbui,	4655 071 24 4784
Gray Taylor VK4OH	Hervey Bay Amateur Radio Club	PO Box 526, Hervey Bay,	4655 071 25 7167
Ted Watson VK4OW	Hervey Bay Amateur Radio Club	PO Box 629, Hervey Bay,	4655 071 28 3489
Reg Wheeler VK4PL	Hervey Bay Amateur Radio Club	PO Box 629, Hervey Bay,	4655 071 28 1383
Ken Balchford VK4BKB	BARC Inc Exam Service	9 Que Hse St, Bundaberg,	4670 071 51 3195
Tony Dorrough VK4NAD		15 Memory Blvd, Innes Park,	4670 071 59 3474
Gerard Feenick VK4SW	BARC Inc Exam Service	M/S 108 Hoffmans Rd, Burnett Heads,	4670
Kay Meredith VK4LQ		36 Tarakan St, Bundaberg,	4670
Bob Millgate VK4ADZ	BARC Inc Exam Service	9 Chapman St, Booloolah Bundaberg,	4670
Bernie Sma man VK4BFS		6 Williams St, MS 108 Burnett Heads,	4670 071 59 4483
Glyn Gibbins-Johns VK4LA		M/S 882 Mount Perry Rd, Via Gin Gin,	4671 071 56 3206
Noela MacDonald VK4ANJ	Gladstone Exam Service	98 Barney St, Gladstone,	4680 079 72 5494 (AH)
Vic MacDonald VK4CA	Gladstone Exam Service	98 Barney St, Gladstone,	4680 079 72 5494 (AH)
Merv Deakin VK4DV		PO Box 380, Rockhampton,	4700 079 34 0193
Lytle Dobbs VK4ALD	WIAQ CQ Branch Rockhampton	265 Carpenter St, Rockhampton,	4701 079 31 2775 (BH)
Nick Gugley VK4CNQ	WIAQ CQ Branch Rockhampton	265 Carpenter St, Rockhampton,	4701 079 31 2398 (BH)
Clive Sait VK4ACC	WIAQ CQ Branch Rockhampton	265 Carpenter St, Rockhampton,	4701 078 28 1173 (AH)
David Wilson VK4UN	Central Highlands ARC	6 Gum St, Tien,	4709 079 84 8442
David Christmas VK4DJC		27 Dee St, Mt Morgan,	4714 079 38 1263
Hank Hahn VK4VCD	Biloela ARC	2 Raglan St, Biloela,	4715 079 92 1386
Mark Haseman VK4CMH	Biloela ARC	PO Box 315, Biloela,	4715 079 92 2481
Graeme Martin VK4KGM	Biloela ARC	PO Box 291, Biloela,	4715 079 92 3919
John Petersen VK4AXA	Central Highlands ARC	48 Littlefield St, Blackwater,	4717 079 82 5126
J.m. Storch VK4AVS		PO Box 147, Blackwater,	4717 079 82 6279
James West VK4YFS		41 Blain St, Blackwater,	4717 079 82 6756 (AH)
Lloyd West VK4QE		41 Blain St, Blackwater,	4717 079 82 6756 (AH)
Geoff Bonney VK4GI	TAFE College Emerald	Capricorn Hwy, Emerald,	4720 079 82 3699 (BH)
Pete Foster VK4COU		39 Woodbine St, Springsure,	4722 079 86 1882
Allan Abbott VK4ABP	Central Highlands ARC	PO Box 493, Longreach,	4730 076 58 3111 (BH)
Wal Douglas VK4AIV	Mackay Amateur Radio Assoc	PO Box 1065, Mackay,	4740 079 42 1615 (AH)
Ed Roache VK4EJR	Central Highlands ARC	21 Badila Crt, Mt Pleasant Nth Mackay,	4740 079 42 1435 (AH)
George Glendinning VK4AJL	Mackay Amateur Radio Assoc	PO Box 5509, Mackay MC,	4741 079 59 2436 (AH)
Ray Mansfield VK4AIL		39 Fifth Ave, Scottville,	4804 077 85 6166
George Brand VK4DZB	Bowen & Collinsville ARC	PO Box 534, Bowen,	4805 077 85 5958
Keith Carter VK4ACK	Bowen & Collinsville ARC	22 Soldiers Rd, Bowen,	4805 077 86 2497
Brian Winterburn VK4BOW		7 Hay St, Bowen,	4805 077 86 2367
Alan Stephenson VK4APS	Townsville ARC Inc	PO Box 5315 MSO, Townsville,	4810 077 71 2513
John Stevens VK4AFS	Townsville ARC Inc	GPO Box 419, Townsville,	4810 077 22 1113 (BH)
Ian Sutton VK4ZT	Townsville ARC Inc	PO Box 964, Townsville,	4810 077 71 1211 (BH)
Roger Cordukas VK4CD	Townsville ARC Inc	1620 Ross River Rd, Kelso,	4815 077 74 0221 (AH)
Brice Jones VK4KIT	Mount Isa & District ARG	57 Brett Ave, Mount Isa,	4825 077 43 5618 (AH)
Robert Mackie VK4SWR	Mount Isa & District ARG	PO Box 1429, Mount Isa,	4825 077 43 0123 (AH)
Keith Noll VK4AJA	Mount Isa & District ARG	23 Abel Smith Pde, Mount Isa,	4825 077 43 3116 (AH)
Bruce Taylor VK4DD		13 Cook Cres, Mt Isa,	4825 077 43 0391 (AH)
Roger Wood VK4ARZ	Mount Isa & District ARG	PO Box 1715, Mount Isa,	4825 077 43 5935 (AH)
Ted Kollodge VK4AVG	Tropical Coast ARC	PO Box 1019, Innisfail,	4860 070 61 4517 (AH)
Les Meier VK4EMI	Tropical Coast ARC	48 Laurie St, Innisfail,	4860 070 61 2932 (AH)
Graham Bennett VK4FGB	Cairns Amateur Radio Club Inc	PO Box 1914, Cairns,	4870 070 54 1448
Pat Laurenzi VK4MP	Cairns Amateur Radio Club Inc	PO Box 1426, Cairns,	4870 070 54 4157 (AH)
Chris Parr VK4ANL	Cairns Amateur Radio Club Inc	PO Box 1215, Cairns,	4870 070 51 0452 (AH)

Examiner	Group/Club	Address	Telephone
Will Booth VK4ZNZ	Tableland Radio Club MS	1318 McLean Rd, Yungaburra,	4872 070 95 3888
Tom Debe VK4DEB	Tableland Radio Club	PO Box 13, Cairn,	4872 070 95 8217
Rene Brank VK4MES	Thursday Island ARC	PO Box 410, Thursday Island,	4875 070 69 1854 (AH)
Rex East VK4BRE	Thursday Island ARC	PO Box 418, Thursday Island,	4875 070 69 1679
Bill Leachidge VK4WL	Torres Straits Examinations	C-Post Office, Thursday Island,	4875
Ron Goodhew VK4EMF	Tableland Radio Club	PO Box 253, Mareeba,	4880 070 92 2888 (BH)
Chuck Warrle VK5CQ		GPO Box 222, Adelaide,	5001 018 80 4408
John McKee VK5BJM	Port Adelaide Radio Club	5 Diosa Cres, Lockleys,	5032 08 43 8386 (AH)
Christine Taylor VK5CTY	Taylor Radio Group	16 Fairmont Avenue, Black Forest,	5035 08 293 5615
Geoff Taylor VK5TY	Taylor Radio Group	16 Fairmont Avenue, Black Forest,	5035 08 293 5615
Alan Ha nes VK5ZD	Adelaide Hills ARS Inc	22 Monane Ave, Panorama,	5041 08 276 7091
Donald McDonald VK5ADD	WIA (SA Div) INC	6 Whittier Ave, Marion,	5043 08 276 1251
Doug Head VK5DUG	Adelaide Hills ARS Inc	PO Box 401, Blackwood,	5051 08 276 3698 (AH)
Ph Day VK5GT	Adelaide Hills ARS Inc	PO Box 260, Belair,	5052 08 366 2214 (BH)
Murray Burford VK5ZQ	WIA (SA Div) INC	261 Belair Rd, Torrens Park,	5062 08 276 3393
Rowand Bruce VK5OJ	WIA (SA Div) INC	42 Glen Eagles Rd, Mt Osmond,	5064 08 379 4584
Rob Gurr VK5RG	Taylor Radio Group	35 Grandview Ave, Urrbrae,	5064 08 379 1889
Doug Carruthers VK5KCG	Elizabeth Amateur Radio Club	PO Box 8, Elizabeth,	5068 08 287 2668
George Lndop VK5BGL	Port Adelaide Radio Club	28 Dyott Ave, Hampstead Gardens,	5068 08 261 5910
Peter Watts VK5ZFW	North East Radio Club	18 Bendigo Cres, Modbury,	5092 08 266 3332 (AH)
Rick Ginnell VK5GV	North East Radio Club	43 Lincoln Cres, Pooraka,	5095 08 262 5152 (AH)
Rob Gunnourie VK5F	WIA (SA Div) INC	99 Maxwell Rd, Ingle Farm,	5098 08 264 6581
Charlie McEachern VK5KDK	North East Radio Group	56 Wright Rd, Ingle Farm,	5098 08 396 1131 (AH)
J m Martin VK5QOB	Elizabeth Amateur Radio Club	PO Box 8, Elizabeth,	5112 08 287 2868
Da as Taylor VK5WA	Elizabeth Amateur Radio Club	PO Box 8, Elizabeth,	5112 08 259 6166 (BH)
Don Martin VK5AEY	Elizabeth Amateur Radio Club	268 Midway Rd, Elizabeth Downs,	5113 08 287 1049
Hans Smit VK5YX	Adelaide Hills ARS Inc	PO Box 271, Ashton,	5137 08 390 3760 (AH)
Keith Pettman VK5NAX		11 Norfolk Ave, Victor Harbor,	5211 08 52 7139 (AH)
Don Wilton VK5KDW	WIA (SA Div) INC	PO Box 40, Littlehampton,	5250 08 388 6968
Joe Neel VK5PWC		9 Callington Rd, Strathalbyn,	5255 08 36 2865
David G as VK5ANB	South East Radio Group Inc	17 Reginald St, Mount Gambier,	5290 08 25 3142 (BH)
Ivan Huser VK5QV	South East Radio Group Inc	PO Box 1103, Mount Gambier,	5290 08 25 5514
Trevor Niven VK5NC	South East Radio Group Inc	PO Box 1103, Mount Gambier,	5290 08 25 5553 (AH)
Kevin O'Rourke VK5QA	South East Radio Group Inc	PO Box 1103, Mount Gambier,	5290 08 25 3079
John Ruslon VK5ARK	Riverland Amateur Radio Club	PO Box 98, Renmark,	5341 08 88 6127
Hugh Lloyd VK5BC	Riverland Amateur Radio Club	PO Box 743, Renk,	5343 08 82 2690
Graham Johnson VK5SU	Mid North Repeater Group	25 Square St, Port Pirie,	5540 08 82 4122 (BH)
Leo Vette VK5SO		36 Ferme St, Port Pirie,	5540 08 33 0485 (AH)
David Bice VK5QJ	Moonta Scout Group ARC	PO Box 133, Moonta,	5558 08 25 2263
John Wayne VK5BL	Moonta Scout Group ARC	PO Box 133, Moonta,	5558 08 25 2798
Jack Kleinrahm VK5A.K	Lower Eyre Peninsula ARC Inc	11 Luke St, Port Lincoln,	5806 08 82 1466 (BH)
John Piewn VK5AEP	Lower Eyre Peninsula ARC Inc	18 Wandana Ave, Port Lincoln,	5806 08 82 3161
Peter Baker VK5BWI	WHYCOM SA	49 Bastyan Cres, Whyalla Stuart,	5808 08 45 2480 (BH)
Stuart Crowther VK5BWC	Whyalla Amateur Radio Club	68 Acacia Dve, Whyalla Stuart,	5808 08 45 4331 (AH)
Aan G christ VK5BWG	Port Augusta ARC	6 Kinnear Street, Port Augusta,	5700 08 43 6455 (AH)
Peter Horgan VK5BWH	Port Augusta ARC	6 Kinnear Street, Port Augusta,	5700 08 42 2383 (AH)
Bill Offer VK5BWO	Port Augusta ARC	6 Kinnear St, Port Augusta,	5700 08 42 2855 (AH)
Phil Jameson VK5ZPP	Northern Corridor Radio Group	11 Bromley Place, Kingsley,	6026 09 409 1156 (AH)
Phil Street VK5KS	Northern Corridor Radio Group	PO Box 97, Mirrabooka,	6061 09 344 5241 (AH)
Rob Lamb VK5VP		10 Buttenworth Ave, Koonoolia,	6064 09 247 3009
Des Kinnerley VK6ZJ	Northern Corridor Radio Group	34 Lalina Way, Wanneroo,	6085 09 405 4215
Dianne Cousins VK6BC		25 Dellar Rd, Maddington,	6109
Glenn Cousins VK6AUZ		25 Dellar Rd, Maddington,	6109
Clyde Hillson VK6ZCH		3 Youngs Place, Parmella,	6167 09 419 5764 (AH)
Pat Haywood VK6PH	Peel Amateur Radio Group Inc	9 Baudin Way, Singleton,	6175 09 537 1289
Red Harrod VK6BRH	Peel Amateur Radio Group Inc	PO Box 1010, Mandurah,	6210 09 535 7178 (AH)
Rex Hickney VK6SN	Peel Amateur Radio Group Inc	PO Box 1010, Mandurah,	6210 09 535 7992
Frank Langford VK6BLA	Peel Amateur Radio Group Inc	10 Clipper Way, Halls Head,	6210 09 581 5028
Rev Suter VK6SA	The Amateur Radio Exam Centre	PO Box 261, Mandurah,	6210
Con Murphy VK6PM		PO Box 88, Yarloop,	6218 09 37 33 1978
Bill Harrison VK6W.H	Bunbury Radio Club Inc Lot	143 Ewing Rd, Allanson,	6225 09 34 4374 (AH)
Murray Peacock VK6YD	Bunbury Radio Club Inc	PO Box 31, Bunbury,	6230 09 21 5442
John Thompson VK6AJJ	Bunbury Radio Club Inc	PO Box 31, Bunbury,	6230 09 27 1126
Aubrey Keithley VK6XY	Southern Electronics Group	242 Serpentine Rd, Albany,	6330 09 42 2624
Tom Reed VK6TR	Southern Electronics Group	Lot 25 Shellbay Rd, Lower King,	6330 09 44 7395
Ron Howrie VK6ANR	Godfilds ARS	PO Box 1281, Kalgoorlie,	6430 09 91 4457
Aen Ransley VK6A.O	Godfilds ARS	214 McDonald St, Kalgoorlie,	6430 09 21 7746 (AH)
Keith Gadsby VK6MKG	Esperance ARS	13 Westmacott St, Esperance,	6450 09 71 2708 (AH)
Graeme Smith VK6ATS	Esperance ARS	12 Young Place, Esperance,	6450 09 71 2801 (AH)
Peter Zwarcz VK6APZ	Esperance ARS	PO Box 1116, Esperance,	6450
Bob Hollingshead VK6KI		PO Box 1651, Geraldton,	6530 09 64 2246 (AH)
Bob Marlow VK6PL	Geraldton Amateur Radio Club	PO Box 2004, Geraldton,	6530 09 21 1367 (AH)

Examiner	Group/Club	Address	Telephone
Gordon Williams VK6IU		PO Box 259, Northampton,	6535 099 34 1259
Bob Jones VK6CJ		PO Box 162, Camarvon,	6701 099 41 1855
Scott Savage VK6AAB		PO Box 1172, Camarvon,	6701 099 41 3444 (BH)
Rex Wiggins VK6ARW		PO Box 532, Exmouth,	6707 099 492335
Ed Williams VK6AJR		PO Box 532, Exmouth,	6707 099 491880
Steve Hill VK6PA	ARS Northwest Australia Inc	PO Box 410, Wickham,	6720 091 85 4510 (AH)
Dave Holt VK6YA	ARS Northwest Australia Inc	PO Box 410, Wickham,	6720 091 87 1926
Peter Dowd VK7PR	WIA Tasmanian Division	12 Susan Pde, Lenah Valley,	7008
Andrew Dixon VK7GL	WIA Tasmanian Division	Faulkners Rd, Glenlusk,	7012 002 39 0249 (AH)
Mike Jenner VK7FB	WIA Tasmanian Division	PO Box 641, Rosny Park,	7018 018 12 1755
Bill Reid VK7WR	WIA Tasmanian Division	40 Wentworth St, Bellevue,	7018 002 44 4089 (AH)
Reg Emmett VK7KK	WIA TAS DIV Southern Branch	PO Box 26, Rokaby,	7019 002 48 6824 (AH)
Bill Bower VK7AV	WIA TAS DIV Northern Branch	40 Amy Rd, Launceston,	7250 003 44 1584 (AH)
Al Burke VK7AN	WIA TAS DIV Northern Branch	30 Newland St, Trevallyn,	7250 003 27 1171 (AH)
Barry Hill VK7BE	WIA TAS DIV Northern Branch	611 West Tamar Rd, Riverside Launceston,	7250 003 27 2096
Gary Hammond VK7KYZ	WIA TAS DIV Northern Branch	PO Box 82, Beaconsfield,	7270 003 83 1275
Ron Churcher VK7RN	WIA Tasmanian Division	PO Box 277, Devonport,	7310 004 24 6366 (AH)
Tony Clayton VK7AH	WIA Tasmanian Division	10 Wrenwood Dve, Quilba,	7310 004 24 5375 (AH)
David Spicer VK7ZDJ	WIA Tasmanian Division	5A Helen St, Ulverstone,	7315 004 25 2030
Phil Harbeck VK7PU	WIA Tasmanian Division	14 Kennedy St, Burnie,	7320 004 31 3020
Clarrie Hilder VK7HC	WIA Tasmanian Division	5 Speed St, Coose,	7320 004 31 8211
Shane Lynd VK7KHZ	WIA Tasmanian Division	14 Read St, Tullish,	7321 004 73 4256 (AH)
Steve Bush VK7EQ	WIA Tasmanian Division	PO Box 123, Somerset,	7322 004 35 1043
Dick Van Beek VK7KVB	WIA Tasmanian Division	31 Beech Dve, Rosebery,	7470 004 73 1693 (AH)

BT

SOME THINGS HAVE NO COMPARISON

amateur
radio
action

The magazine for the serious radio operator

AT YOUR NEWSAGENT EVERY MONTH

Stolen Equipment Register

The Stolen Equipment Register is one of many services offered to members by the WIA. It has been in operation since 1980, and is maintained on a computer database in the Federal Office.

Members wanting to take advantage of the Register, either to publicise the theft of their equipment, or to check equipment they are about to purchase, may write, fax, or telephone the Federal Office.

Any telephone reports of stolen equipment MUST be followed by written confirmation of the details. For maximum efficiency, these details should include the manufacturer's name, model, type of equipment, serial number, date stolen, owner's name, address and callsign, any distinguishing features or modifications and the police contact (if any).

When equipment is recovered it is important that you advise the Federal Office as soon as practicable. The following list is the most up-to-date information available at the time of going to press, but is based entirely on information received from you, the member.

Would all members please check this list and immediately advise if there are any amendments. For space reasons, only those items stolen in the past three years are published in this list.

Manufacturer	Model	Description	Serial Number	Owner	Date Stolen	Comment
ALINCO	DJ-100T	5B 2 MET WHIP		VK7NDQ	03/06/94	STOLEN FROM COOLANGATTA
ALINCO	DR112T	14 WAVE 27MHZ WHIP		VK2BQ	03/06/94	STOLEN FROM COOLANGATTA
AMSTRAD	PC700	H/HELD & RD ANTENNA	0005049	VK2BQ	17/10/93	CALLSIGN PAINTED ON BODY
CHIRNIDE		2M FT TRANSCEIVER	6006697	VK1DA	13/09/93	PART OF MOUNT BRACKET & MICROPH
DICK SMITH		LAPTOP COMP JTR	532-872380	VK5ALE	16/04/92	ENGRAVED LEPARC OR VK5ALE
FDK		5 MOB HF ANTENNAS		VK3AMM	26/03/92	
GEN ELECTRIC	MLLT 7	2M 5/8 MOB LE WHIP		VK3AMM	26/03/92	
GME		2M TRANSCEIVER		VK3XY	06/03/92	ENGRAVED LICENCE S 415 265 D
HOME BREW	TX472S	16 CH 27MHZ SSB CB		VK7NDQ	03/06/94	STOLEN FROM COOLANGATTA
HOMEBREW		40 CH UHF RECEIVER	006-62229	VK7GO	15/02/93	NO DISTINGUISHING FEATURES
ICOM	2410H	ATL		VK7NDQ	03/06/94	STOLEN FROM COOLANGATTA
ICOM	2SAT	6M 60W LINEAR AMP		VK3AMM	26/03/92	
ICOM	2SRA	MOBILE RADIO	2668	STEWART ELEC	25/04/92	
ICOM	720A	HAND HELD	1387	STEWART ELEC	25/04/92	
ICOM	735	HAND HELD	3299	STEWART ELEC	25/04/92	
ICOM	IC225	HF TRANSCEIVER	06619	KN7DO	03/06/94	STOLEN FROM COOLANGATTA
ICOM	IC27H	MULTI-MODE HF RADIO	8065	STEWART ELEC	25/04/92	
ICOM	IC701	2M MOB LE	82015291	VK3ZFV	30/08/93	SLIGHT HUM IN BACKGROUND
ICOM	C730	2M MOB LE TRANSCEIV		VK2KFK	20/04/93	REAR HEATSINK BROKEN/PEX ED
ICOM	C735	HF TRANSCEIVER	02318	VK5ALE	16/04/92	ENGRAVED LEPARC OR VK5ALE
ICOM	C735	HF TRANSCEIVER	13814689	VK3MT VK3COT	05/11/92	DC POWER CORD NOT TAKEN
ICOM	C735	HF TRANSCEIVER	006196	RMIT	06/12/92	ENGRAVED HEATSHK & TOP COVER
ICOM	C735	HF TRANSCEIVER	020254	VK2AZI	16/12/92	INC MOUNTING BRACKET/MICROPHONE
ICOM	CW2A	PSL POWER SUPPLY	00180	RMIT	06/12/92	
ICOM	P2AT	DUAL BAND H/HELD	001781	VK6ZPE	10/10/93	HM46L MIC/SPEAK DUAL WHIP ALSO
ICOM	R1	HAND HELD	1817	STEWART ELEC	25/04/92	
ICOM	W2A	WIDE BAND RECEIVER	64395	STEWART ELEC	25/04/92	
KENPRO	KR500B	DUAL BAND HAND HELD	1886	STEWART ELEC	25/04/92	
KENWOOD	TH-28A	H/D ROTATOR		VK6YEF	16/02/92	
KENWOOD	TH-28A	HAND-HELD	41003177	ROSS KEOGH	14/07/94	
KENWOOD	TH75A	HAND-HELD	41003180	ROSS KEOGH	14/07/94	STOLEN FROM CHURCH ST STORE
KENWOOD	TH75A	VHF/UHF HAND HELD	0061315	VK6KCH	26/02/92	CASE - SPKR/MIC - MOB POWER LEAD
KENWOOD	TH77A	DUAL BAND H/HELD	30401157	VK6AD	27/02/94	PLS DIAMOND D/BAND ANTENNA
KENWOOD	TM221A	2M FM TRANSCEIVER	8022576	VK7GO	15/02/93	NO DISTINGUISHING FEATURES
KENWOOD	TM221A	2W FM TRANSCEIVER	8022583	VK3KGM	04/11/92	
KENWOOD	TR2400A	2 METRE H/HELD	0114944	VK6ART	20/06/93	
KENWOOD	TR751A	144 MHZ TRANSCEIVER	7050702	VK3HY	23/04/92	NO IDENTIFICATION
KENWOOD	TR851	70 CM TRANSCEIVER	8100046	VK3TRI	28/04/94	CALLSIGN ENGRAVED
KENWOOD	TS120S	HF TRANSCEIVER	0090035	VK2VE	05/06/92	WITH MIKE AND 12V POWER LEAD
KENWOOD	TS120S	HF TRANSCEIVER	0090741	VK5AKN	12/05/92	ENGRAVED WITH DRIVERS LICENCE NO
KENWOOD	TS120V	HF TRANSCEIVER		VK2NVS	16/12/93	LIC NO N574522 ON BACK
KENWOOD	TS440S	HF TRANSCEIVER	9100338	VK6ELL	01/02/92	
KENWOOD	TS520S	HF TRANSCEIVER	560782	SPARC	16/06/93	
KENWOOD	TSW1000A	DUAL BAND 2M/70 FM	8052033	VK3CV	04/05/93	MICROPHONE & ANTENNA DIPLEXER
MICROMETER		SWR METER NOT KNOWN		VK5ALE	16/04/92	ENGRAVED LEPARC OR VK5ALE
PAC-COMM	TINY 2	TNC	TS782	GOLDBURN ARC	27/11/92	
PAC-COMM	TINY 2	TNC	TS784	GOLDBURN ARC	27/11/92	
PACOMAR ELTE	TX5500	HF LINEAR AMPLIFIER		VK2DIG	19/07/94	MODS TO 259 SOCKET AND HEATSHK
PHILIPS	1680	VHF MOBILE RECEIVER		VK3XY	06/03/92	ENGRAVED LICENCE S 415 265 D
PHILIPS	20GR1050	20 INCH TV		VK6RDN	06/09/92	
PHILIPS	PRM80	VHF TRANSCEIVER	NOT KNOWN	VK3HY	23/04/92	4 COMM 3 X 144 MHZ RPTR CHANNELS
PHILIPS	FM828	FM TRANSCEIVER	45458	GOLDBURN ARC	27/11/92	
SAWTRON	999	UHF CB TRANSCEIVER	203026	VK2NSN	24/04/92	

Manufacturer	Model	Description	Serial Number	Owner	Date Stolen	Comment
STANDARD	C146A	2M TRANSCEIVER		VK3CXE	05/10/92	XTALS FITTED RPT 6700-7000-6500
STANDARD	C528	2M HAND HELD	00E 130667	VK2PD	27/08/92	MANUAL TAKEN BUT NOT RUBBER DUCK
STANDARD	C528	2M HAND HELD	00E 150667	VK2PD	27/08/92	MANUAL ALSO
STANDARD	CAT08	MIC/SPEAKER		VK3CXE	05/10/92	
STANDARD	CMPO8	RUBBER DUCK ANTENNA		VK3CXE	05/10/92	
SUPER PANTHER		40C+ 27MHZ CB	00029377	VK6ZGP	26/04/92	
UNIDEN	PC122	SSB/AM CB TRANSCEIVER	NOT KNOWN	VK3HY	23/04/92	PHILIPS MICROPHONE
WELZ		SWR/POWER METER		VK2AZJ	16/12/92	
YAESU	FC 700	A T U	4J090473	VK3SALE	16/04/92	ENGRAVED LEPARC OR VKSALE
YAESU	FC700	ANTENNA T.JNER		VK2NVS	16/12/93	LIC NO N674522 ON BACK
YAESU	FP700	POWER SUPPLY 3C-020584		VK4BWG	11/03/92	
YAESU	FT 880	HF TRANSCEIVER	2K130424	DSE COBURG	18/07/94	NO ACCESSORIES OR PACKING TAKEN
YAESU	FT280R	2M TRANSCEIVER	2F22898	VK3CXE	05/10/92	
YAESU	FT209RH	2M FM HANDHELD	6E-260229	VK4BWG	11/03/92	FN84 & FBA10 BATTERY PACKS
YAESU	FT209RH	2M FM HANDHELD	NOT KNOWN	VK6KAD	08/02/93	BROKEN BATTERY RETAINING CLIP
YAESU	FT21RH	2 M MOBILE TX	8M180306	VK2UP	06/07/92	FROM MOTEL HURSTVILLE
YAESU	FT230R	2M FM TRANSCEIVER	2M120897	VK2JCC	10/02/93	
YAESU	FT23R	2 METRE HI/HELD	9C651443	VK6TT	11/07/93	
YAESU	FT23R	2 METRE HI/HELD	00071776	VK6KDN	09/09/92	PAG BATTERY ELIM PACK ALSO
YAESU	FT290R	MK1 2 M TRANSCEIVER	3E270928	VK3TRI	28/04/94	INT RF PREAMP/CALLSIGN ENGRAVED
YAESU	FT290RH1	2M FM TRANSCEIVER	8G130128	VK3YNB	04/06/92	WITH BATTERY BOX
YAESU	FT290RH	2M FM TRANSCEIVER	9F240010	VK2BVR	10/03/93	
YAESU	FT415	2 METRE HAND HELD	2I 12773	DICK SMITH	05/05/93	
YAESU	FT415	2 METRE HAND HELD	2I 173633	DICK SMITH	05/05/93	
YAESU	FT470	CAL BAND HAND HELD	1 K 430817	D SMITH ELEC	31/12/92	
YAESU	FT7	HF TRANSCEIVER		VK3XY	06/03/92	ENGRAVED DILIGENCE S 415 265 O
YAESU	FT707	HF TRANSCEIVER	0G030440	VK3AMM	26/03/92	
YAESU	FT712	UHF TRANSCEIVER	81120576	GOLDBURN ARC	27/11/92	
YAESU	FT747		2C721025	VK3YSU	00/02/94	ITEMS FROM DICK SMITH SPRINGVALE
YAESU	FT757	HF TRANSCEIVER	4E-071058	VK4BWG	11/03/92	
YAESU	FT757GX	HF TRANSCEIVER	IL590102	DICK SMITH E	13/05/92	STOLEN FROM PARRAMATTA STORE
YAESU	FT911			VK3YSU	00/02/94	ITEMS FROM DICK SMITH SPRINGVALE
YAESU	FT912R		DKD40382	VK3YSU	00/02/94	ITEMS FROM DICK SMITH SPRINGVALE
YAESU	FT1707	6M TRANSVERTER	1H010331	VK3AMM	26/03/92	
YAESU	SP4	EXTENSION		VK2AZJ	16/12/92	
YAESU	YM24A	MIC/SPEAKER		VK3CXE	05/10/92	

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QSP News

1994 Amateur Radio Awards

Amateur Radio magazine, as members know, is a magazine of the members and for the members of the organisation which represents the Australian amateur service both nationally and internationally.

Some of the interesting and original articles which appear in *Amateur Radio* are republished in overseas publications but this is not the only tribute which authors of articles submitted to the WIA magazine receive. Every year the WIA Publications Committee selects winners of three annual magazine awards. Yet again, the task of the Publications Committee

was not an easy one this year considering the wide range of quality articles published in our magazine over the past 12 months.

However, at the Publications Committee meeting held on 8 December 1994 the annual *Amateur Radio* awards were allocated. The eventual winners were selected after much consideration by that committee.

The **AI Shawsmith Journalistic Award**, presented for an article on a radio theme considered best to display journalistic merit, was awarded to Bob Hawksley VK2GRY for his article "Forever Courteous" which appeared in the December issue of *Amateur Radio*. Bob receives an engraved wall

plaque as well as a cheque for \$100.00.

The **Technical Award**, for the best technical article(s) published during the year, was awarded to Will McGhie VK6UU for his monthly column *Repeater Link*. Will receives a cheque for \$100.00.

The **Higginbotham Award**, for meritorious service to amateur radio generally, was awarded to Eric Jamieson VK5LP for 25 years of service to VHF/UHF operators through his monthly column *VHF/UHF — An Expanding World*. Eric also receives a cheque for \$100.00.

Congratulations to Bob, Will and Eric on winning these *Amateur Radio Awards* for 1994!

ALARA

Sally Grattidge VK4SHE*, ALARA Publicity Officer

Monday Night Net

The 80 metre net has struggled on through the poor summer conditions and is always well attended, even though some of the more distant stations can do little more than shout hello through the static. However, even at this time of year, there is the occasional night when signals are surprisingly good, so it is always worth listening to see who you can copy.

Recent regular call signs include VK2AMJ, VK3AGC, VK3DMS, VK3DYF, VK3FMC, VK3OZ, VK4AOE, VK4NBC, VK4SHE, VK5AMD, VK5AOV, VK5BMT, VK5CTY, VK5YL and VK5YF, with others checking in when conditions permit. A less frequently heard call sign is always made welcome. If you cannot hear net control, just call after one of the stronger signals and they will relay for you.

If you wish to know what the weather has been like for the last week around Australia, just listen to the ALARA Monday net. That is the way the net starts most weeks and it makes interesting listening, showing what a large and varied country we live in.

Details of this net are, Monday nights on 3580 kHz +/- at 1000 UTC during daylight saving, and 1030 UTC at other times.

ALARA committee meetings are also held on 80 metres. Motions are passed and votes counted with many relays, "say agains", phonetic spelling and the rest. Christine VK5CTY does a mighty job keeping everything under control. I am sure most of us have experienced less well organised meetings where everybody can see and hear each other clearly.

News from the Members

Mary VK5AMD has had to sheath her antennas with short lengths of over-sized plastic tubing to deter the galahs and correllas who like to perch on them. Mary has had very little trouble with the birds since she tried this trick.

Mary VK3FMC has a different problem. When the beam is set one way the birds leave their calling cards on OM Dick's (VK3DLG) vintage Mercedes. If it is turned the other way, Mary's washing receives the "donations". Passers-by think they have a lot of DX contacts.

Marilyn VK3DMS has a new improved signal after installing a new balun.

In December a very pleasant luncheon was attended by Jenny VK5ANW, Denise VK5YL, Christine VK5CTY and her OM Geoff VK5TY to welcome Pat VK3OZ and

her OM Peter VK3VB to Adelaide. They were in Adelaide to visit their son and family who were also able to join the party at the Old London Tavern. Philip VK5VB, wife Kathy and their little daughter were welcome additions to the group. Despite arranging the gathering, Meg VK5AOV found she had another engagement so was unable to join in. However, Pat and Peter were able to spend a few hours with Meg and David on their way to Turadn later in the week.

Across the Tasman, Dawn ZL2AGX is recovering well from heart surgery, and will be more active once all the antennas are reinstalled at the new home. On the other side of the continent, Bev VK6DE's OM, Brian VK6AI, is doing well too and back playing bowls.

VK5 Luncheon

Due to the closure of "The Red Apple" restaurant at Edwardstown, the regular meeting place for the VK5 girls on alternate months, it has been necessary to find another venue. In February and April the Parkside "Sizzler" will be the place to meet. The April luncheon will be held on the first Friday instead of the second Friday as this is Good Friday. Visitors are welcome and should contact one of the VK5 girls for details.

If you are going to the Gosford Field Day on 26 February, keep a look out for Dorothy VK2DDB and her ALARA stall there. Go and say "hello" and find out more about ALARA.

Marlene VK3WQ and Jim VK3DL, on the last leg of their 1994 tour, were in Adelaide in November, where they met Meg VK5AOV and David VK5OV at the Art Gallery to view the Irish Masterpieces. After which they were joined by Christine VK5CTY and Geoff VK5TY for lunch. Jim and Marlene also managed a trip on the O-Bahn, the Adelaide Christmas Pageant and two days at Murray Bridge with Meg and David.

The VK5 girls ran their usual catering stall for the AHARS Electronic Sale in November last year, and this time it did not coincide with the ALARA contest. Maria VK5BMT ran the day very efficiently assisted by Jenny VK5ANW and Meg VK5AOV. Christine brought the pies from her freezer, but could not stay as she had an amateur exam to supervise. ALARA members there for the day included Jean Day, Jean Kopp, Tina Clogg, and Mary Rodgers and OM Peter from Rudall.

Bev VK4NBC and Graham VK4BGC

are trying to master a new computer. That should keep them quiet for a while. They attended several Hamfests last year, but feel these are not as good as they used to be. Bev had two memorable contacts in December. A good one with Kirsti VK9NL, and a bad one with a nest of paper wasps.

There were some fruity topics of conversation on the net just before Christmas. Marilyn VK3DMS was bottling apricots, Meg VK5AOV had plenty of pears, Mary VK5AMD had bananas and passionfruit, Sally VK4SHE was making mango chutney and Mary was picking loganberries.

Joan VK3BJB travelled extensively last year keeping up with family and friends including Japanese amateurs on ships in port in Australia. She is improving her Japanese by going to classes and checking into the Japanese Maritime Mobile and Yacht networks.

The Townsville YLs decided not to have a Christmas break-up last year as there were so many other parties going on. They planned to have a new year get-together instead. Those intending to take their holidays in the sunny north are reminded of the North Queensland Convention in September. After the successful Queensland YL meet last year in Bundaberg, this will be a great opportunity to get together again with no problems about how to amuse the OM.

The District Radio Ladies combined with the CQ Branch for a Christmas party at the QTH of Robyn VK4RL and Rob VK4SEA on 17 December. Children in nearby streets were delighted by Santa throwing lollies from a trailer cunningly disguised as a sleigh.

New Callsign

June VK4DDJ is now VK4SJ, and her OM is VK4BP.

Thought For The Month

The nice thing about radio friends is that you can take them with you when you move.

*Cib PO Woodstock, QLD 4876
ar

**Help stamp out
stolen equipment
— keep a record of
all your equipment
serial numbers in a
safe place.**

AMSAT Australia

Bill Magnusson VK3JT*

National co-ordinator

Graham Ratcliff VK5AGR

Packet: VK5AGR@VK5WI

AMSAT Australia net:

Control station VK5AGR

Bulletin normally commences at 1000 UTC, or 0900 UTC on Sunday evening depending on daylight saving and propagation. Check-ins commence 15 minutes prior to the bulletin.

Frequencies (again depending on propagation conditions):

Primary 7.064 MHz. (usually during summer).

Secondary 3.685 MHz. (usually during winter).

Frequencies +/- 5 kHz for QRM.

AMSAT Australia newsletter and software service

The newsletter is published monthly by Graham VK5AGR. Subscription is \$30 for Australia, \$35 for New Zealand and \$40 for other countries by AIR MAIL. It is payable to AMSAT Australia addressed as follows:

AMSAT Australia

GPO Box 2141

Adelaide SA 5001

Frequencies for Phase 3D

AMSAT Phase-3 D design team member Peter Guelzow (DB2OS) reported recently that light crystals for the transponders were ordered and further changes in receiver and transmitter frequencies are not expected. He released the following transponder-plans.

AMSAT PHASE 3-D Transponder-Bandplan as at 1 Dec 94

AMSAT P3-D Uplink Bandplan

Uplink	Digital	Analog Passband
15 m	none	21.210 - 21.250 MHz
2 m	145.800 - 145.840 MHz	145.840 - 145.990 MHz
70cm	435.300 - 435.550 MHz	435.550 - 435.800 MHz
23cm(1)	1269.000 - 1269.250 MHz	1269.250 - 1269.500 MHz
23cm(2)	1268.075 - 1268.325 MHz	1268.325 - 1268.575 MHz
13cm(1)	2400.100 - 2400.350 MHz	2400.350 - 2400.600 MHz
13cm(2)	2446.200 - 2446.450 MHz	2446.450 - 2446.700 MHz
6cm	5668.300 - 5668.550 MHz	5668.550 - 5668.800 MHz

Note. all receivers are inverting

AMSAT P3-D Downlink Bandplan

Downlink	Digital	Analog Passband
10 m	29 330 MHz (+/- 5 KHz)	%
2 m	145 955 - 145.990 MHz	145 805 - 145.955 MHz
70cm	435.900 - 436.200 MHz	435 475 - 435.725 MHz
13cm	2400.850 - 2400.950 MHz	2400 225 - 2400.475 MHz
3cm	10451.450 - 10451.750 MHz	10451 025 - 10451.275 MHz
1.5cm	24048.450 - 24048.750 MHz	24048.025 - 24048.275 MHz

Beacons

Band	Beacon-1	Beacon-2
2 m	none	none
70cm	435.450 MHz	435.850 MHz
13cm	2400.200 MHz	2400.600 MHz
3cm	10451.000 MHz	10451.400 MHz
1.5cm	24048.000 MHz	24048.400 MHz

Note:

Beacon-1 (formerly known as the General Beacon) and Beacon-2 (formerly known as the Engineering Beacon) support command access and will be modulated in 400 bit/s BPSK AMSAT-format and possibly CW and RTTY. This means that currently available telemetry demodulators will work on p3d.

Due to limitations within the IF-matrix and two metre bandwidth there will not be any beacon on two metres.

Demise of OSCAR-13

Reports have been circulating via news broadcasts and the packet network on the imminent demise of OSCAR-13. It was reported to be expected to re-enter the atmosphere and burn up in mid December 1994. They got the month right but not the year! The latest studies by James Miller G3RUH and others have shown that the likely date for re-entry is in early December 1996. James' money is on 5 Dec 1996 but he hastens to say that closer estimates will be available as the time approaches. Funny how these rumours get around. The accurate information is not secret and has been published in all AMSAT magazines and newsletters including Graham VK5AGR's AMSAT-VK newsletter and this column. I urge you to not listen to rumours, listen to the beacon. All relevant and topical

information is broadcast regularly through AO-13 itself. The broadcasts are made in 400 baud PSK, RTTY and CW.

New Satellites

The long awaited RS-15 satellite has become a reality. It was launched from Baikonur space centre at 0300 UTC on 26 December 1994. RS-15 is a mode "A" satellite rather reminiscent of OSCAR-7. It has a similar orbit with an apogee of 2254 km and a perigee of 1875 km. This gives it a much larger footprint than the usual low-earth-orbiter. As an example, when it is over the north Atlantic ocean it can see parts of Western Europe, eastern Canada and the US, northern South America and West Africa. The apogee has been placed over the northern hemisphere and the position is not quite as good in our latitudes. It is still pretty good though and passes can be as long as 28 minutes when RS-15 goes overhead.

I can remember OSCAR-7 being up for as long as 25 minutes which means that it travels slowly, is easy to track and gives plenty of time for good QSOs. RS-15 should prove popular among newcomers and old timers alike as mode "A" has few of the problems associated with LEOs having UHF transponders. The Doppler shift is easy to follow and simple antennas are quite satisfactory to receive the down link signals on 29 MHz. We used to obtain very good results on OSCAR-7 with a one wavelength square (quad) loop mounted horizontally as high as possible in the clear.

Footprints should enable QSOs to be made over all of VK/ZL and parts of Asia and Antarctica. OSCAR-7, like most amateur low-earth-orbiters, was in a polar orbit giving two sets of three passes per day. RS-15 is in a high inclination orbit

(nearly 65 degrees) meaning that at our latitudes we can expect the two sets of passes to "string" together giving one series of maybe six or seven orbits per day. This is typical of high inclination satellites like MIR and STS

Transponder frequencies for RS-15 are.

Uplink 145.858 to 145.898 MHz
Downlink 29.354 to 29.394 MHz
CW beacon 1 to 29352.5 kHz
CW beacon 2 to 29398.7 kHz

The transponders support CW and SSB modes only. Please DO NOT overload the transponders with continuous modes like AM, FM, SSTV etc.

At the time of writing there is still some uncertainty about the keps for RS-15. This is not unusual as it is often the case for a short period soon after launch that the satellite and the last stage of the rocket orbit close to each other and it is difficult to tell which is which. This will be resolved in the coming weeks but for those of you who wish to look at the orbit I have searched out what seems to be a satisfactory set of keps.

Plug them in and give this new bird a go.

Satellite: RS-15

Object Number: 94085A

NASA Designation: 23139U
Epoc Time 94: 362 6062197
Epoc Rev: 283
Mean Anomaly: 52.6969
Mean Motion: 11.19236697
Inclination: 64.7982
Eccentricity: 0.0224393
Arg of Perigee: 305.3126
R.A.A.N: 170.9393
Decay: -4.2000e-007

I mentioned new satellites (plural). The second worthy of mention is a new NOAA weather satellite. Many of our number are avid followers of the WXsats. The pictures available on the high resolution SHF channel are extraordinarily good, showing clear detail of coastal and topographical features down to a km or so. NOAA-14 is no exception. It was launched at 1002 UTC on 30 December 1994 from Vandenberg Air Force Base. Within a few days high resolution GIFs began appearing on the various internet services.

Next month, FAQs (Frequently Asked Questions).

*359 Williamstown Rd, Yarraville VIC 3013
Packet VK3JT/VK388S
ar

QSP News

Insert

Elsewhere in this issue of *Amateur Radio* you will find an insert which provides a suggested wording for a letter which can be sent to any politicians regarding the attack mounted on our hobby by the threat of increased charges and taxes. You may wish to change the content to suit your own ideas.

For greatest effect your letter should preferably be no longer than one page. In the form provided it will just fit on an A4 sized sheet allowing room for headings and signatures, etc.

A good idea would be to obtain a copy of the release provided as an insert to *Amateur Radio* magazine for January 1995 and forward this with your letter.

Strictly Ham Pty. Ltd. ACN 059 838 407

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ALL NEW KENWOOD MOBILES



TM-251A 2m DATA MOBILE

- ✧ 1200/9600 BAUD PACKET
- ✧ 41 MEMORIES (EXPANDABLE TO 200)
- ✧ S METER SQUELCH
- ✧ BUILT IN DIGITAL RECORDING
- ✧ DUAL BAND RECEIVE
- ✧ 50 W OUTPUT POWER.



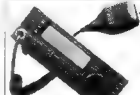
TM-255A 2m ALL MODE

- ✧ 1200/9600 BAUD PACKET
- ✧ DETACHABLE FRONT PANEL
- ✧ ALL MODE OPERATION
- ✧ 101 MEMORY CHANNELS
- ✧ TWIN TUNING DIALS
- ✧ 40W OUTPUT POWER



TM-733A DUAL BAND MOBILE

- ✧ 1200/9600 BAUD PACKET
- ✧ DETACHABLE FRONT PANEL
- ✧ DUAL RECEIVE VHF & UHF
- ✧ 72 MEMORY CHANNELS
- ✧ S METER SQUELCH
- ✧ 50/35W OUTPUT POWER



TS-605 6m ALL MODE

- ✧ 100 MEMORY CHANNELS
- ✧ DUAL VFOs
- ✧ DUAL MENU SYSTEM
- ✧ ALL MODE SQUELCH
- ✧ COMPUTER CONTROLLABLE
- ✧ 90W RF OUTPUT

CALL FOR PRICES

G. OMURA

AWARDS

John Kelleher VK3DP — Federal Awards Manager*

Changes to DXCC listings since 1987.

All dates shown are effective from the date of publication by the ARRL.

Firstly, the additions:

Jan. 1987 3Y	Peter 1 Island
April 1988 P4	Aruba Island
April 1988 S0	Western Sahara.
May 1989 4J1	Malyj Vysotskij Island.
May 1989 3D	Rotuma Island.
May 1990 3D	Conway Reef.
May 1990 T33	Banaba (Ocean) Island.
May 1990 ZS9	Walvis Bay.
May 1991 7O	Yemen (Nth & Sth combined).
Sept. 1991 ZS0-1	Penguin Island.
Jan. 1993 9A	Croatia.
Jan. 1993 S5	Slovenia.
Jan. 1993 T9	Bosnia-Herzegovina.

June 1993 4N5	Macedonia.
June 1993 OK	Czech Republic.
June 1993 OM	Slovakia.

The deletions were:

Mar. 1991 Y2	East Germany.
Mar. 1991 4W	North Yemen.
Mar. 1991 7O	South Yemen.
June 1993 A15	Abu Ail Island.
June 1993 OK	Czechoslovakia.
Jan. 1994 ZS9	Walvis Bay.
Jan. 1994 ZS0-1	Penguin Island.

From the above list, it can be seen that the former country of Czechoslovakia is now divided into the Czech Republic, and Slovakia. Yugoslavia remains as a DXCC country, while the breakaway Republics of Slovenia, Croatia, Bosnia-Herzegovina and Macedonia have been added to the DXCC countries list.

Walvis Bay and Penguin Island stayed

for a comparatively short time, both being deleted by March 1994. The operation by P5RS7 was an absolute fizzer. The ARRL has removed any inference of this supposed operation from their books. BV9P, Pratas Island, is still hanging in the balance, requiring more definite documentation. More recently, the DXCC has voted against adding the Austral Marquesas, and Balleny Islands to the DXCC countries list, which stands at 326 countries.

There is a hint of an operation to little-known Sala-y-Gomez Island in the South Pacific in August 1995. The tentative callsign may be XR0Z.

If you find that your callsign does not appear in the following WIA DXCC listings, it is because:

- (a) you have not updated your claims since December, 1988; or
- (b) your current listings have dropped below 100 countries due to changes and deletions, etc.

Now, here are your current WIA DXCC listings....

WIA DXCC Standings		VK4DP		289/300		VK2BQS		162/165		General Listing	
Phone		VK2AKP		289/294		VK4LV		159/161		VK3XB	309/343
Honour Roll		VK2DTH		287/289		VK4BAY		158/160		VK4AAR	308/311
Call sign	Countries	VK4BG		286/301		VK2NO		157/		VK4RF	306/332
VK5MS	326/379	VK2APK		285/313		VK4IT		153/154		VK3KS	295/322
VK4KS	326/372	VK3CYL		283/290		7J1AAL		149/150		VK5WO	295/310
VK4LC	326/372	VK3DU		282/290		VK4ARB		149/150		VK6RU	274/318
VK5WO	326/361	VK5OU		281/286		VK4DMP		147/148		VK2APK	274/304
VK6HD	326/350	VK3VU		272/275		VK3DNC		141/142		VK3AKK	267/272
VK6LK	326/350	VK4OD		272/275		VK6LC		139/140		VK3JI	257/280
VK4RF	326/344	VK3GI		263/266		VK2EQ		139/		VK7BC	224/233
VK3QI	326/339	ZS6IR		259/262		VK4CHB		137/138		VK3DP	222/225
VK3AKK	326/337	VK3VQ		255/272		VK2SPS		135/137		VK4LV	218/225
VK3DYL	326/331	VK2SG		253/274		VK4VJ		135/137		VK4DA	217/219
VK6RU	325/379	VK2AVZ		251/257		VK6LG		135/135		VK2CWS	210/212
VK4OH	325/331	VK4QO		251/255		VK4CY		132/133		VK4DP	203/214
VK2FGI	325/330	VK2PU		244/247		Ti2YLL		129/		VK4OD	185/188
VK5QW	325/329	VK3DP		243/246		LU5EWO		125/		VK3CIM	184/185
VK4UA	324/337	VK6YF		237/240		SM6PRX		122/126		VK6PY	178/181
VK1ZL	324/329	VK2CKW		234/237		VK3TI		122/125		VK5BO	159/184
VK5EE	322/327	PS7AB		233/237		VK7WD		115/116		VK6MK	157/159
VK6NE	320/335	VK3DS		226/336		VK3BRZ		114/116		VK3DNC	154/157
VK5XN	318/338	VK2ETM		226/227		VK4NJV		111/115		VK4XJ	150/163
VK3YJ	317/322	VK5IE		219/221		VK4VIS		110/112		VK6BHW	150/152
VK3OT	315/327	VK5BO		218/222		VK5AGM		105/107		VK4UA	143/155
		VK3UY		217/217		N4JED		104/105		VK4ICU	143/
General Listing		VK6APW		215/216		VK3EHP		103/105		VK5UO	142/143
VK3AMK	313/329	VK3DD		214/217		VK4IL		103/		EA6AAK	138/
VK3CSR	312/320	VK4XJ		204/216		VK4BJE		102/104		VK7DQ	137/138
VK6AJW	312/317	ON8DP		200/202		VK5GZ		102/104		VK2SG	136/148
VK7BC	310/319	VK4KRP		199/201		JH3OHO		101/103		VK4KS	126/134
VK6VS	309/312	VK2VFT		198/201		VK2CMV		100/102		VK7TS	125/
VK4AAR	307/310	VK4DDJ		198/198		VK6APH		100/101		VK2TB	123/125
VK5WV	305/324	VK3CIM		196/199						VK3AGW	119/120
VK3RF	304/311	VK3DVT		196/198						VK5GZ	116/118
VK6PY	304/309	VK4AU		191/191						VK2AKP	115/117
VK3WJ	303/308	VK6BQN		186/190						VK4CY	110/
VK6RO	299/304	VK4ICU		182/184						VK5QJ	107/109
VK2WU	292/296	KA1TFU		176/179						VK8KV	102/103
VK3JI	290/304	VK7TS		170/171						VK2CXC	101/103

WIA DXCC Standings

CW

Honour Roll

Call sign

Countries

VK6HD	324/344
VK3QI	324/335

WIA DXCC Standings		VK4AAR	308/311	VK3CIM	236/239	VK4NJQ	133/139
Open		WA3HUP	306/330	VK4LV	235/242	VK4EZ	129/138
Honour	Roll	VK3JI	305/333	VK4XJ	233/249	YB8GH	127/129
Callsign	Countries	VK6PY	305/312	VK5UO	226/229	VK7HV	114/117
VK4KS	326/372	VK4DP	304/317	VK4DA	218/220	VK5BWW	111/112
VK5WO	326/364	VK6RO	304/309	WA5VGI	216/218	VE7BS	106/107
VK4RF	326/361	VK3DP	293/296	VK2CWS	214/216	VK3COR	102/104
VK6HD	326/351	VK2APK	292/328	VK4ICU	212/214	VK3VB	102/104
VK3QI	326/340	VK4BG	292/310	VK2VFT	202/205	SM7WF	101/
VK3AKK	326/337	VK2SG	289/314	VK7TS	201/202		
VK6RU	325/379	VK2AKP	289/294	VK3DNC	185/187	WIA DXCC Standings	
VK5QW	325/329	VK4OD	285/288	VK2BQS	176/179	RTTY	
VK4UA	324/339	VK3CYL	283/290	PR7CPK	174/175	Callsign	Countries
VK3JA	321/367	VK3UY	272/274	VK6MK	162/164	VK3EBP	198/200
VK3OT	318/330	VK3VQ	270/287	VK6NV	154/156	VK2SG	157/160
VK7BC	317/325	VK5BO	264/301	VK2CXC	150/152	VK2BQS	115/117
General Listing		TF5BW	260/264	VK4CHB	145/147		
VK3AMK	313/329	VK4CY	242/243	VK6LC	142/144	*PO Box 2175 Caulfield Junction 3161	
VK3XB	311/340	VK2ETM	239/240	VK5GZ	140/142		AR

Contests

P Nesbitt VK3APN* — Federal Contest Coordinator

Contest Calendar Feb-Apr 95

Feb 11/12	PACC GWSB DX Contest	(Jan 95)
Feb 11/12	Spanish RTTY Contest	(Jan 95)
Feb 18/19	ARRL DX CW Contest	(Jan 95)
Feb 24/26	CQ 160 Metre SSB Contest	(Dec 94)
Feb 25/26	RSGB 7 MHz CW Contest	(Jan 95)
Feb 25/26	LBA Belgium CW DX Contest	
Mar 4/5	ARRL DX SSB Contest	(Jan 95)
Mar 11/12	BERU CW Contest	
Mar 18/19	WIA John Moyle Field Day	
Mar 18/19	BARTG RTTY Contest	
Mar 25/26	CQ WPX SSB Contest	
Apr 1/2	SP DX Contest	
Apr 8/9	Israel DX Contest	
Apr 29/30	Hevetia DX Contest (Switzerland)	

This month sees the long-awaited results of the Remembrance Day Contest, courtesy of Alek VK6APK, fresh in his new role of RD Contest Manager. Well done Alek. As usual, many letters and comments were received with the logs, and excerpts will be printed next month if space permits.

We also have the rules for the John Moyle Field Day, a very enjoyable event, and a great chance to head for the wide open spaces and operate portable or mobile. Thanks to Phil VK1PJ.

Finally, we have the results of the Commonwealth Contest, or BERU as it is affectionately known, together with the rules for the next event in March, courtesy of John VK3ZC.

Space is tight this month, so I'll close now and say thanks again to our contributors (VK1PJ, VK3ZC, and VK6APK), also CQ, QST, and Radio Communications. Until next month, good contesting!

73,

Peter VK3APN

Contest Details

The following contest details should be read in conjunction with the "General Rules & Definitions" published in April 1993 *Amateur Radio*.

Commonwealth Contest

(BERU)

CW only: 1200z Sat to 1200z Sun, 11-12 March

This annual event is always very popular in this part of the world. It runs each year on the second full weekend in March, and its purpose is to promote contacts between stations in the British Commonwealth and Mandated Territories. Categories are single operator, single and multiband; and receiving. The use of spotting nets, packet clusters, etc is precluded. Contacts may be made with any station using a British Commonwealth prefix, except those within the entrant's own call area. Bands are 80-10 m, using the bottom 30 kHz of each band, except when contacting novice stations above 21030 and 28030 kHz.

Exchange RST and serial number commencing with 001. Score five points per QSO, with a bonus of 20 points for each of the first three QSOs with each Commonwealth call area on each band (note that, for the purpose of this contest, the entire UK area counts as one call area).

Several "headquarters" stations will be active during the contest, and will send "HQ" after their serial number to identify themselves. Each HQ station counts as an additional call area, and therefore attracts the 20 point bonus. Entrants may

contact their own HQ station for points and bonuses.

Show duplicate contacts in the log with zero points. Entrants making more than 80 QSOs should include a sorted alphabetical list of the call signs appearing in the log, together with either the serial number sent or the time of contact beside the call sign. Separate logs and lists of bonuses claimed are required for each band. Single-band entrants should claim points for contacts on the selected band,

A. J & J COMAN ANTENNAS

Dual band Colinear 2M&70cm	\$ 95
2M colinear 2 5/8	\$ 93
12 e-e 2M	\$123
6 M J-pole	\$109
6 M colin 6 dbd rad 4.NEW	\$150
6 ele 6 M	\$196
Duo 10-15 M	\$265
3 ele 15 M	\$190
3 ele 20 M	\$298
20 m log-yag array 11.5 dbd	\$685
M 8 Vert NO TRAPS 10-80 M	\$255
Tr band beam HB 35 C 5 ele	\$675
40 M linear loaded 2 ele	\$484
13-30 M logperiodic 12 ele	
all stainless/steel fittings	\$885
70 cm beam 12 ele ba /Feed	\$102
23 cm slot fed 36 e brass cons	
s/solder-assembled 18 dbd	\$170
80 m top load/cap/hat vert.	\$260
3 ele 40m /l/cap hats 60mm boom	\$785
2 m 144 190 2.2 wavelength boom	\$145

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CLARKFIELD 3429
PHONE 054 285 134**

but should also submit details of QSOs made on other bands for adjudication purposes.

Include a cover sheet showing standard details, and send the log postmarked by 10 April to RSGB HF Contests Committee, c/o S Knowles G3UFY, 77 Bensham Manor Road, Thornton Heath, Surrey, CR7 7AF, England. Airmail is advised, as late logs may be treated as check logs. The Senior and Junior Rose Bowls will be awarded to the overall leader and runner-up respectively, and Certificates of Merit to the leading stations in each category and call area on each band.

The following call areas are recognised for the purpose of scoring in the 1995 Commonwealth Contest

A2, A3, AP, C2, C5, C8, CY9, CY0, G/GB/GD/GI/GJ/GM/GU/GW (all one area), H4, J3, J6, J7, J8, P2, S2, S7, T2, T30, T31, T32, T33, V2, V3, V4, V5, V8, VE1, VE2, VE3, VE4, VE5, VE6, VE7, VE8, VK1, VK2, VK3, VK4, VK5, VK6, VK7, VK8, VK9C, VK9L, VK9M, VK9N, VK9W, VK9X, VK0 (Heard Isl), VK0 (Macquarie Isl), VK0 (Antarctica), VO1, VO2, VP2E, VP2M, VP2V, VP5, VP8 (Falkland Isl), VP8 (S Georgia), VP8 (S Sandwich Isl), VP8 (S Shetland Isl), VP8 (S Orkney Isl), VP8 (Antarctica), VP9, VQ9, VR6, VS6/VR2 (Hong Kong), VU, VU4 (Andaman & Nicobar Isl), VU7, VY1, YJ, Z2, ZB2, ZC4, ZD7, ZD8, ZD9, ZF, ZK1 (N Cook Isl), ZK1 (S Cook Isl), ZK2, ZK3, ZL0 or ZL (NZ reciprocal calls), ZL1, ZL2, ZL3, ZL4, ZL5, ZL7, ZL8, ZL9, 3B67, 3B8, 3B9, 3DA, 4S, 5B4, 5H, 5N, 5W, 5X, 5Z, 6Y, 7P, 7Q, 8P, 8Q, 8R, 9G, 9H, 9J, 9L, 9M2, 9M6/8, 9M0, 9V, 9Y, GB5CC (RSGB HQ station), various other HQ stations.

EARTQ RTTY Contest

0200z Sat to 0200z Sun, 18-19 March
(See February 1994 *Amateur Radio* for rules).

CQ WPX Contest

SSB: 0000z Sat to 2400z Sun, 25-26 March
CW: 0000z Sat to 2400z Sun, 27-28 May

This contest is sponsored by CQ Magazine, and the objective is to contact as many stations worldwide as possible on 1.8-30 MHz (except 10, 18 & 24 MHz). Categories include single operator (either single or all band), subdivided according to power (unrestricted, low power max 100 W O/P, and QRP max 5 W O/P); and multioperator (either single or multitransmitter, all band only). Single operator stations are where one person performs all operating, logging, and spotting functions. The use of DX spotting nets places the station in the multioperator single transmitter category. Multi-multi stations must have all

transmitters located within a 500 m diameter circle or within the property limits of the licensee's address, whichever is greater. All antennas must be physically connected by wires to the station transmitters and receivers.

Exchange RS(T) plus a three digit number starting at 001. Continue to four digits if past 1000. Multitransmitter stations must use separate numbers for each band. Score 3 points (14-30 MHz) or 6 points (1.8-7 MHz) for contacts with stations on different WAC continents, and 1 point (14-30 MHz) or 2 points (1.8-7 MHz) for contacts with stations within the same WAC boundary. Contacts with stations in the same country are permitted for multiplier credit but have zero point value.

The multiplier is the total number of prefixes worked on all bands (each prefix is counted only once regardless of the number of different bands on which it is worked). A "prefix" is the unique letter/numeral combination forming either the first part of the callsign, or else the normal country identifier for stations using their home callsigns in another DXCC country. For example: N8, W8, AG8, Y22, Y23, HG7, HG73 are all separate prefixes. The prefix for both N8ABC/KH9 and KH9/N8ABC is KH9. KH6XXX operating from Ohio could sign /W8, /N8, /K8, or any other prefix authorised for that district. Portable designators without numbers will be assigned zero after the letter prefix, eg N8ABC/PA becomes N8ABC/PA0. Any calls without numbers will be assigned a zero after the first two letters, eg RAEM becomes RA0EM. Suffixes indicating maritime mobile, mobile, portable, alternate location, and licence class do not count as prefixes (eg /MM, /M, /P, /A, /E, /J). The final score is QSO points x multiplier.

Logs must show times in GMT, with breaks clearly marked. Show prefix multipliers only the first time they are worked. Logs must be checked for duplicates, correct points, and prefix multipliers. Logs must be accompanied by a sorted alphanumeric list of prefix multipliers, and a summary sheet showing call, name, address, category, power, scoring information, and a signed declaration that all contest rules and radio regulations were observed. Logs may also be submitted on 3-1/2" or 5-1/4" DOS disk in ASCII format (.BIN, .RES, .DBF, .WKS also acceptable), providing a sorted multiplier file and a paper summary sheet are included. Send logs postmarked by 8 May (SSB) or 7 July (CW) to WPX Contest, 76 N. Broadway, Hicksville, NY 11801, USA. Indicate SSB or CW on envelope.

A comprehensive range of trophies and plaques is offered, and certificates will be

awarded to the highest scoring station in each category, country and VK call area. To be eligible for awards, single operator stations must show at least 12 hours operation, and multioperator at least 24 hours operation. Single band entries showing points claimed for more than one band will be judged as multiband unless otherwise specified. Where returns justify, second and third place awards will also be made.

1995 John Moyle Contest

Presented by Phil VK1PJ

Well, once again those who enjoy a weekend in the bush should be planning for the John Moyle Field Day. The rules remain the same as last year, except for the finishing time which has been brought forward to give entrants the chance to pack up and return home at a respectable hour. Since most activity has usually all but disappeared by Sunday afternoon, the effect on scores should be minimal.

I hope to be on air the weekend prior to the contest, family and work commitments permitting, to help anyone with rule interpretations etc. My planned schedule is 14.275 MHz at 1200 EST and 3.570 MHz 2030 EST (approx) on Sunday, 12 March. For those without HF callsigns, perhaps you can join one of the nets as a second operator if anyone wishes to contact me privately, my home phone number is 06 292 3260, and my address is shown in the Log Submission section below. Best of luck and see you on air, hopefully as one of the operators of VK1DX (Canberra DX Group)!

Overview

1. The aim is to encourage and provide familiarisation with portable operation, and provide training for emergency situations. The rules are therefore designed to encourage field operation.

2. The contest takes place on the third weekend in March each year, and this year (1995) runs from 0100 UTC Saturday to 0059 UTC Sunday, 18-19 March.

3. The contest is open to all VK, ZL and P2 stations. Other stations are welcome to participate, but can only claim points for contacts with VK, ZL and P2 stations.

4. Entries shall consist of one choice from each of the following (eg 6 hour, portable, single operator, phone, VHF/UHF):
a. 24 or 6 hour,
b. Portable, Home, or Receive,
c. Single or Multiple operator,
d. Phone, CW, or Open mode,
e. HF, VHF/UHF, or All Band

Scoring

5. Home stations for all sections shall score:

a. Two points per QSO with each portable station;

b. One point per QSO with other home stations.

6. Portable HF stations shall score two points per QSO.

7. Portable stations shall score the following on 6 m:

- a. 0-49 km, two points per QSO;
- b. 50-99 km, ten points per QSO;
- c. 100-149 km 20 points per QSO;
- d. 150-199 km 30 points per QSO;
- e. 200-499 km 50 points per QSO;
- f. 500 km and greater, two points per QSO.

8. Portable stations shall score the following on 144 MHz and higher:

- a. 0 to 49 km, two points per QSO;
- b. 50 to 99 km, ten points per QSO;
- c. 100 to 149 km, 20 points per QSO;
- d. 150 km and greater, 30 points per QSO.

9. For each VHF/UHF QSO where more than two points is claimed, either the latitude and longitude of the station contacted, or other satisfactory proof of distance, must be supplied.

Log Submission

10. Logs must be accompanied by a summary sheet showing: callsign, name, mailing address, section entered, number of contacts, claimed score, location of the station during the contest, and equipment used. For multioperator stations, the callsigns and signatures of all operators should be included. If any VHF/UHF QSOs have been made which qualify for more than 2 points, the latitude and longitude of the station during the contest must be included.

11. The summary sheet must include the following declaration signed by the operator, or in the case of a multiple operator station, one of the licensed station operators: *"I hereby declare that this station was operated in accordance with the rules and spirit of the contest!"*

12. Logs must be postmarked no later than 28 April 1994, and forwarded to John Moyle Contest Manager, 33 Willoughby Cres, Gilmore, ACT 2905, Australia. An ASCII text copy on a MS-DOS floppy disk would be most helpful, with the following alternative data formats also acceptable: Wordstar, Word 5, WordPerfect, dBase 3 & 4, Lotus 123.

Certificates and Trophy

13. At the discretion of the Contest Manager, certificates will be awarded to the winners of each portable section. Note that entrants in a 24 hour section are ineligible for awards in a six hour section.

14. The Australian station with the highest CW score will be awarded the President's Cup, a perpetual trophy held at the Federal Office, and will receive an individually inscribed wall plaque as permanent recognition.

Disqualification

15. General WIA contest disqualification criteria, as published in *Amateur Radio* from time to time, applies to entries in this contest. Logs which are illegible or excessively untidy are also liable to be disqualified.

Definitions

16. A portable station comprises field equipment operating from a power source independent of any permanent facilities, eg batteries, portable generator, solar power, wind power.

17. All equipment comprising the portable station must be located within an 800 m diameter circle.

18. A single operator station is where one person performs all operating, logging, and spotting functions.

19. A single operator may only use a callsign of which he/she is the official holder. A single operator may not use a callsign belonging to any group, club or organisation for which he/she is a sponsor except as part of a multioperator entry.

20. A multioperator station is where more than one person operates, checks for duplicates, keeps the log, performs spotting, etc.

21. A multioperator station may use only one callsign during the contest.

22. Multiple operator stations may only use one transmitter on a given band at any one time, regardless of the mode in use.

23. Multiple operator stations must use a separate log for each band.

24. A station operated by a club, group, or organisation will be considered to be multioperator by default.

25. None of the portable field equipment may be erected on the site earlier than 24 hours before the beginning of the contest.

26. Single operator stations may receive moderate assistance prior to and during the contest, except for operating, logging and spotting. The practice of clubs or groups providing massive logistic support to a single operator is, however, totally against the spirit of the contest. Offenders will be disqualified and, at the discretion of the manager, may be banned from further participation in the contest for a period of up to three years.

27. Phone includes SSB, AM and FM.

28. CW includes CW, RTTY, and packet.

29. It is not expected that any other modes will be used in the contest, but if they are, they shall be classed as CW.

30. All amateur bands may be used except 10, 18 and 24 MHz. VHF/UHF means all amateur bands above 30 MHz.

31. Cross-band, cross-mode and contacts made via repeaters are not

permitted for contest credit. However, repeaters may be used to arrange a contact on another frequency where a repeater is not used for the contact.

32. Portable stations may make repeat contacts and claim the appropriate points providing that at least three hours have elapsed since the previous valid contact with that station on the same band and mode.

33. Home stations may not claim points for repeat contacts.

34. Stations must exchange ciphers comprising RS(T) plus a three digit number commencing at 001 and incrementing by one for each contact.

35. Portable stations shall add the letter "P" to their own cipher, eg 59001P.

36. Multiple operator stations are to commence each band with 001.

37. Receiving stations must record the ciphers sent by both stations being logged. QSO points will be on the same basis as for Home Stations, unless the receiving station is portable.

38. The practice of commencing operation and later selecting the most profitable operational period within the allocated contest times is not in the spirit of the contest, and shall result in disqualification. The period of operation commences with the first contact on any band or mode, and finishes either 6 or 24 hours later.

73, Phil VK1PJ

Results of 1994 Commonwealth Contest

Presented by John VK3ZC

Every 11 years or so, as we approach the minimum on the sunspot graph, the number of entries submitted in the BERU seems to follow a similar path. However, in 1994 the number of entries took a real drive, totalling only 67 multiband and 24 single band, the lowest since 1974.

Conditions were terrible, both locally and worldwide and, with bad QRN during the last few hours, many operators gave up and went QRT without further thought of sending in a log; what a pity! Nevertheless, there were 22 VK entries, (17 multiband and 5 single banders), and about half a dozen ZLs were active, although only two logs made it to the UK.

Bob Whelan G3PJT/V99 was the outright leader with 5587 points, 2288 less than the 1993 top score, and Barry Simpson VK2BJ achieved 4590 points, 2205 lower than his score last year. Special thanks to Tino Pavic VK3EGN who, as VK3WIA, provided a welcome HQ bonus prefix in this part of the world.

RSQB Summary (by G2HLU)

Conditions did not favour our flagship contest this year, especially on 21 and 28 MHz. This is reflected in the scores, which

are down considerably on the last few years. Not unexpectedly, those with good antennas did best. However, there were some notable absentees, especially ZL3GQ, G3MXJ and VE7CC.

Even so, about 640 stations participated, with the following Commonwealth call areas active: C5, C6, G, GB (HQ), GD, GI, GM, GW, V3, V8, VE1, 2, 3, 4, 5, 6, 7, 9 VE3 (HQ), VK1, 2, 3, 4, 5, 6, 7, 8, 9, VK3 (HQ), VO1, VP2, VP5, VQ9, VR2/VS6, VU, Z2, ZB2, ZC4, ZD8, ZF2, ZL1, 2, 3, 4, 3B8, 3D2, 3DA0, 5B4, 5W, 5Z, 6Y, 7P, 7Q, 8P, 8Q, 8R, 9H, 9J and 9V.

The winner of the 1994 BERU Rose Bowl is Bob Whelan G3PJT/VP9, no stranger to success in BERU both from home and abroad. He used 250 W from a TS930 and TS940, and a range of beams. Tim G4VXE, in his first competitive entry in this contest, operated VE3EJ, a station well known at the top of the list, to take second place. Ex-G3PEK evidently finds Australia suits him and, as VK2BJ, moves up a place or two each year: he came third this time and clearly the leaders must watch him! He used only 100 W from a TS930S, with a Cushcraft A4S at 45 ft, and a pair of two half-wave in phase antennas on 7 MHz, also used as doublets on 3.5 MHz. Also very worthy of note is VK3FC who gained 27th place at the age of 90. He was first licensed in 1928.

After his success on 21 MHz in 1992, Bob Whelan G3PJT has donated a series of awards in the form of medals. The Commonwealth Medal will be awarded each year to the individual who is considered to have most improved his performance in BERU, and the HF Contests Committee is very pleased to be able to award the first medal to Tom Dowling VK4OD.

The re-admission of South Africa to the Commonwealth will bring an interesting new dimension to the 1995 event, including more potential bonuses. Finally, perhaps some of those who were only able to be active on a single band can rejoin the multi-band entrants in the next BERU, and help to support RSGB's oldest contest through its sixth sunspot minima.

Some comments received with logs:

"Great contest — polite, gentlemanly — a pleasure!" V85KX; "Conditions mainly rotten ... but great fun!" VK6AJ; "Definitely the worst conditions I have experienced. Fancy only one G on 20 m and no VEs!" VK4OD; "The less said about conditions, the better!" G3NKS; "Antenna a bit of wire about 15 inches above the tiles — no masts are permitted!" VK3XB; "Hard work this year. Very poor conditions!" G4BUO; "Condx lousy, but good fun as always. Even if you banned the term BERU I'm

sure most of us would still use it!" ZL1MH; "Nearly got WAC in one go" G3DOT (4 W QRP!); "Nice to greet some of the OIs who seem to show only during BERU!" VE3ST;

"A bit like pulling teeth" G0LII; "At least I got some good DX!!!" G3ZGC; "Next year I'll try and be in Antigua for the contest" G6QQ

Top Ten

Posn	Call sign	80	40	20	15	10	Total
1	G3PJT/VP9	719	1468	2623	627	150	5587
2	VE3EJ	692	1796	2024	544	98	5154
3 *	VK2BJ	707	1538	1990	355		4590
4	6Y5HN	473	1447	1822	447	130	4319
5	GW3YDX	475	1227	1392	325	40	3469
6	G4BUO	403	1036	1434	350	75	3298
7 *	VK4XA	480	953	1460	200	123	3216
8	ZL1MH	225	1104	1222	283	183	3017
9	G3OZF	255	849	1153	248	75	2580
10	G3TBK	223	685	1291	298	48	2545

Australian Score

Multiband (* Certificate winners)

3	VK2BJ	707	1538	1990	355		4590
7	VK4XA	480	953	1460	200	123	3216
12 *	VK5BN	480	702	792	200		2174
17	VK5GZ	387	495	939	25		1846
18	VK4XW	460	603	705	75		1843
19	VK4EMM	375	922	513			1810
21 *	VK3ZC	515	847	350			1712
23	VK4OD	429	564	564	123	25	1705
24 *	VK8HQ	615	1034	50			1699
25	VK2DID	313	540	622			1475
27	VK3FC	387	600	392			1379
37	VK5RG	303	513	225			1041
39	VK3XB	248	372	305	25		950
50	VK3DDX	175	197	355			727
54	VK5HO	227	250	120	25		622
60	VK2NV		205	318			523
67	VK3KS		50	98			148
--	VK3WIA (Check Log)						

Single-Band

7 MHz		
1 *	VK2APK	1505
4	VK7RO	628
14 MHz		
4	VK4TT	916
5	VK6AJ	877
6	VK2ETM	868
7	VK5AGX	777
11	VK3JI	473

New Zealand Scores

8	ZL1MH	225	1104	1222	283	183	3017
20	ZL1HV	280	590	700	100	50	1720

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FT-2400H Rugged 2m Transceiver

The ultimate in dependability and reliability! The FT-2400H is built using commercial grade mechanical and electronic construction techniques and meets the tough USA MIL-STD-810C shock and vibration requirements, so you know you're getting the highest quality. A one-piece die-cast chassis/heatsink allows three-step output of up to 50 watts without forced air cooling. Plus, fiberglass circuit boards and chip components provide professional-grade reliability. It has a large backlit LCD screen, backlit knobs and 31 tuneable memories (which can store frequency and a four-character name of your choice). A customised microprocessor also provides Auto Repeater Shift to suit Australian conditions. Two-stage track-tuning and a dual FET mixer improve receiver intermod performance. Scanning functions include programmable scan limits, selectable scan resume modes, memory skip, and priority monitoring. Seven selectable channel-steps and CTCSS encode are standard features. Comes complete with MH-26 hand mic., mobile mounting bracket and DC power lead.

Cat D-3830

2 Year Warranty

\$649



FT-5200 2m/70cm Mobile Transceiver

The FT-5200 uses the latest innovations in compact cross-band full-duplex and detachable front-panel design for brilliant mobile performance. It has 32 tuneable memories, a built-in antenna duplexer, dual full-frequency LCD screen (with a gain strength/power output bargraphs for each band), 8-level automatic display/button lighting dimmer and dual external speaker jacks (one for each band). A thermally-activated fan allows up to 50 watts output on the 2-meter band and 35 on the 70cm band. Plus, scanning features include programmable scan limits, selectable scan resume modes, memory skip, priority monitoring and one-touch recall CALL channels. In addition, 6 user-selectable channel steps are provided and a FRC-4 DTMF paging select option lets you program a three-digit ID code so you can be paged by other transceivers or page up to 5 other stations yourself. An optional YSK-1 remote panel lets you relocate the main rig (under the front seat, for example) and mount the control panel on the dash. The FT-5200 comes with hand-mic, mobile mounting bracket and DC power lead.

Cat D-3110

2 Year Warranty

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Yaesu FT-840 HF Transceiver

The FT-840 HF mobile transceiver sets the new standard for high performance in affordable transceivers. Covering all HF amateur bands from 160m-10m with 100w PEP output, and with continuous receiver coverage from 100kHz to 30MHz, the FT-840 provides SSB/CW/AM operation (FM optional), 100 memory channels, a large backlit LCD screen, two independent VFOs per band, an effective noise blanker and an uncluttered front panel, all in a compact case size of just 238 x 93 x 243mm (WHD).

The FT-840 provides an SSB Speech processor for greater audio punch, and IF Shift plus CW Reverse to fight interference. Dual Direct Digital Synthesizers ensure clean transmitter output and fast Tx/Rx switching, while the low-noise receiver front-end uses an active double-balanced mixer and selectable attenuator for improved strong signal handling.

An extensive range of accessory lines are available, including the FC-1D external automatic antenna tuner, so you can customise the FT-840 to suit your operating requirements.

Cat D-3275

2 Year Warranty

\$1595





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Handhelds Way Below Cost!

Yaesu FT-415 Deluxe 2m Handheld



While stocks last, grab a deluxe FT-415 at a great bargain price!

- 144-148MHz Tx, 140-174MHz Rx
 - 41 memories, 2 VFOs
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 - Selectable Auto Repeater shift (VK version)
 - DTMF paging, variable Auto Battery Saver, Auto Power off, VOX, DC power socket
 - Complete with 1000mA/H NiCad (2W RF out), carry case, belt-clip and AC charger
- Cat D-3610

Only \$399

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Grab a bargain while stocks last. Prices are valid until 28th February '95, and some items have limited stocks available.
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Save \$300! Limited Stocks!

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With 1000mA/H NiCd battery, carry case, belt-clip and AC charger. Features extended receive on VHF and UHF, cross-band repeat facility, dual receive and 2 year warranty

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Cat D-3230



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Yaesu FL-7000 1.2kW HF Linear Amplifier

With in-built high power auto antenna tuner and AC power supply. Ex-demo units only

Cat D-2549



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Yaesu LL-5 Phone Patch Interface

Mounts in SP-5 or SP-6 speaker. Requires approved line isolation transformer

Cat D-3267



\$149

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YSK-4700 Separation Kit

To suit FT-4700

Cat D-3301

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Yaesu FNB-11 12V 600mA/H NiCd Battery Pack

Cat D-3496



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High Quality Accessories!

High Performance VHF/UHF Base Station Antennas

Our range of top-name Brainer base station antennas offer outstanding quality and exceptional value. They are stacked collinear types providing high gain, wide bandwidth and a low radiation angle for extended range. The firebrass reinforced polyester (FRP) outer tubing random and gasket seals provide excellent all weather operation, and they are supplied with compact ground-plane radials for a clean radiation pattern. Stainless steel mounting hardware ensures a long trouble free life. They also feature comprehensive instruction sheets to make installation and set up easier. Both come with a 1 year warranty.

2m/70cm GST-1

Frequency: 144-148MHz, 430-450MHz
Gain: 6dB on 2m, 8dB on 70cm
Max. Power: 250W
Length: 2.5m
Type: 2 x 5/8 wave (2m)
4 x 5/8 wave (70cm)

\$199
Cat D-4830

2m/70cm GST-3

Frequency: 144-148MHz, 430-450MHz
Gain: 7.9dB on 2m, 11.7dB on 70cm
Max. Power: 200W
Length: 4.4m
Type: 3 x 5/8 wave (2m)
7 x 5/8 wave (70cm)

\$299
Cat D-4835

2m RF Power Amplifier

Boost your 2m hand-held's performance with this compact amplifier. Works with 0.3 to 5W input and provides up to 30W RF output, plus has an inbuilt GaAsFet receive pre-amp providing 12dB gain. A large heatsink and metal casing allow for extended transmissions at full output, and a mobile mounting bracket is supplied for vehicle use. Requires 13.8V DC at 5A max. Size 100 x 38 x 175mm (W x H x D).



Cat D-2510

digitor \$149⁹⁵

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Rugged HF 5-Band Trap Vertical Antenna

The rugged 5BTV is a 5-band HF trap vertical which continues the Hustler tradition of quality and performance. It incorporates Hustler's exclusive trap design (25mm solid fibreglass formers, high tolerance trap covers and low loss windings) for accurate trap resonance with 1 kW (PEP) power handling. Wideband coverage is provided on the 10, 15, 20 and 40m bands (SWR typically 1.15:1 at resonance, < 2:1 SWR at band edges) with 80kHz bandwidth typical on 80m at less than 2:1 SWR. An optional 30m resonator kit can also be installed without affecting operation of the other bands. High strength aluminium and a 4mm (wall thickness) extra heavy-duty base section guarantee optimum mechanical stability.

At just 7.65m, the 5BTV can be ground mounted (with or without radials, although radials are recommended), or it can be mounted in an elevated position with a radial system. Unlike some other antenna designs, the 5BTV can be fed with any length of 50-ohm coax cable.

Cat D-4920

HUSTLER

\$299

Master Charger 1 Fast Desktop Charger

At last, an intelligent, fast desktop charger that not only suits most current Yaesu handhelds but also many previous models.

Made in USA, the

MasterCharger 1 operates from 13.5V DC and uses

switch-mode technology plus a Philips battery charge monitor IC (with

-ΔV full charge detection) to

correctly fast-charge NiCad batteries between 6V and 13.2V,

then switch to a trickle charge. Suitable for the FT-23/73,

FT-41/411e, FT-470, FT-26, FT-415/B15 and FT-530. Its

charging cradle can easily be replaced, allowing for the insertion

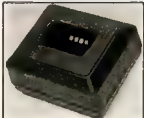
of a new cradle to suit earlier Yaesu transceivers (eg FT-209R)

or different brands/model handhelds. The MasterCharger 1

requires 12-15V DC at 1.3A, and is supplied with a fused

cigarette lighter cable for vehicle use.

Cat D-3850



\$169⁹⁵

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to suit various Kenwood, Icom, and Alinco handhelds.

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Results of 1994 RD Contest: VK3 Wins Again!

Presented by Alek VK6APK

The 1994 RD Contest has again been won by the VK3 Division. Through a combination of heavy publicity and the generation of a healthy "Team Spirit" within that division, the Victorians have retained the title for another year. Runners up were VK6

The results contain some tremendous individual efforts. At least one log was sent in by a 15 year old, and there seemed to be a good representation from the other end of the age spectrum as well, judging from the log sheets with the words "Postmaster General's Department" printed across the top!

I think a couple of gentlemen deserve special recognition for the amazing scores they attained in the contest. They are Ray Cowling VK3ACR, who amassed a total of 1037 points in the VHF Phone and CW sections, and Chris Edmondson VK3CE/YID who scored a total of 971 points in the VHF Phone section. Well done, we salute you!

Whilst speaking about VHF operation, both VK3 and VK6 scored the vast majority of their points in this section. VK5 had some activity, but the other divisions didn't seem to realise their opportunity to make good scores here. Is the reason geographical, or haven't you others thought of using those bands yet?

It was great to receive the many letters which accompanied the entries. Many of the questions and suggestions raised in

some of these letters should be quite seriously considered for future contests. Perhaps there will be space to print some of them for debate and consideration through the WIA and the pages of this magazine.

I believe it is time to implement some changes to encourage a growth in participation, rather than the dwindling interest which is now evident. For example, in 1974 the participation rate (Logs/Licensees) was 11.4% nationally

By 1984 it was down to just 3.95%, and 1994 saw a further fall to 2.64%. What will it be in the year 2004? Give it some serious thought and help us do something to reverse this trend

Once again, congratulations to all who took part in RD '94, and especially to VK3 Division. You are all helping to maintain the spirit of this great contest, and thus doing something positive towards the improvement of amateur radio. See you again in 1995!

Table 1: 1994 Divisional Results

Final Score = No. Logs/No. Lic. x Total Points x WF

1st:	VK3	212/4882	x	20395	x	3.51	=	3106.85
2nd:	VK6	143/1699	x	12438	x	1.56	=	1633.76
3rd:	VK2	35/5368	x	3885	x	11.79	=	297.73
4th:	VK5	39/1810	x	4126	x	3.26	=	289.19
5th:	VK7	24/660	x	1738	x	2.77	=	175.24
6th:	VK4	24/3385	x	1908	x	9.62	=	130.32
7th:	VK1	10/465	x	388	x	2.99	=	24.94
8th:	VK8	2/239	x	56	x	20.46	=	9.62

Table 2: Weighting Factors 1991-1994

Division	1991	1992	1993	1994	Average
VK1	1.00	1.00	1.16	8.78	2.99
VK2	7.29	21.45	8.26	10.15	11.79
VK3	2.88	7.30	2.11	1.75	3.51
VK4	4.08	14.57	6.84	12.79	9.62
VK5	1.83	5.53	2.46	3.22	3.26
VK6	1.26	2.96	1.00	1.00	1.56
VK7	1.92	4.56	1.81	2.78	2.77
VK8	9.72	N/A	N/A	31.14	20.46

Individual Scores		VHF/CW		HF/CW		TRE		JKW	
VK1		Nil Entries		CW		265		134	
(Total = 388 pts)		HF/Phone		ZC		JKX		KKJ	
* Denotes Certificate		BUY		63*		CRA		YPY	
Winner		CAA		449*		GHA		KT	
VHF/Phone		BO		439		JK		NCP	
KLB		ARJ		401		ACT		VKP	
KMA		EJW		396		LDJ		DBZ	
FF		VM		207		DYL		FBA	
CUB		PS		206		EWM		MBL	
ED		XT		173		BNW		NC	
VHF/CW		AGF		173		TB		CG	
FF		CJT		158		XV		KK	
HF/Phone		CJH		131		QI		JWZ	
KLB		ANK		125		AQ		BBM	
RN		NW		103		URH		MFR	
HF/CW		WG/P		102		ZUG		AEO	
FF		EY		90		CAP		AWS	
RN		NPH		66		AUI		ENX	
Individual Scores		BDT		65		BOP		MY	
VK2		EII		57		DUQ		EMF	
(Total = 3885 pts)		ZM		53		EUF		EX	
VHF/Phone		EXA		53		WEG		WWW	
BDT		IV		35		ZNE		KAB	
ANK		RJ		31		ZWI		MET	
ALJ		AYF		16		VCF		LAW	
EY		CF		15		CKK		NE	
				14		VKV		CAM	

DG	57	CRA	102	HF/CW		ATU	369	KG	120
HG	57	LAW	100	FC	79*	TTY	233	APK	117
XLC	56	AU	80	DG	47	PMC	132	ZDJ	114
HY	51	ADW	76	AIC	39	BWH	128	NT	106
PC	51	LK	74	XB	37	UE	116	VHF	105
AGH	50	ATJ	73	BBN	33	GZ	114	YJ	100
JWL	50	GHZ	66	DDX	33	NOS	102	FC	97
UX	50	SM	64	APN	32	PSG	102	RO	89
BII	49	DVT	62	KS	27	CJP	90	UA	86
PTR	49	DET	61	AMD	21	UW	75	UV	85
XLD	48	BMK	60	ZC	20	PF	73	AHH	75
JTW	47	AAM	57	JI	15	3WT/5	72	XH	75
WI	47	ACT	56	WEG	10	ZQ	70	YBQ	72
XPD	46	CIM	55	HY	7	RV	68	iW	66
COD	44	DQW	54	DNG	6	ANB	65	QC	64
DEV	41	EX	53	NMK	5	WO	54	ZPP	64
DD	37	BG	52	Individual Scores		NF	53	SMH	63
YZR	35	ACR	51	VK4		RK	40	SAR	59
XB	34	ENX	51	(Total = 1908 pts)		BVJ	37	HK	56
XJU	34	AMW	50	VHF/Phone,		AKQ	35	TX	56
TFE	33	AYQ	50	VHF/CW		TW	25	CSW	55
EKF	32	JQ	50	Nil Entries		BCD	18	KHD	50
XH	32	EAT	45	HF/Phone		3OM/5	11	APW	48
DCP	30	1WD/3	43	BB	400*	PJR	9	YF	48
GMZ	30	JJM	38	BAY	189	3ABP/5	4	TS	43
PQ	30	MSL	35	DO	163	HF/CW		PO	42
BBA	29	DEV	34	BGC	141	AGX	88*	OE	41
DTR	28	DY	33	NBC	111	GZ	88	AUZ	37
ZS	26	ZT	33	BSH	85	PF	27	BC	37
BTW	24	DYF	32	IS	76	BRC	26	MCB	36
VKC	24	MDH	32	GZ	69	TL	18	ADF	30
LBA	22	VKW	32	PJ	60	Individual Scores		WT	28
BLE	21	BC	31	WRM	53	VK6		IV	27
DET	20	ALM	28	ACW	50	(Total = 12438 pts)		CV	25
ZPP	20	LBA	28	BIF	48	VHF/Phone		UT	25
CCB	19	EWM	26	BBA	41	KS	598*	FRE	21
BSP	18	JKA	25	DM	38	BDJ	370	MAP	21
GOD	18	KAV	25	BTS	27	ANC	338	AO	20
JI	18	AUI	22	OD	22	VP	314	PFI	20
KS	17	WEG	22	OX	19	AD	308	SM	20
BTW	15	DNG	21	FK	11	XV	279	EB	19
ZJH	15	NC	21	WJG	10	RR	273	RU	19
XMP	14	PTR	21	HF/CW		THB	273	VZ	17
EAT	13	DCP	20	LV	104*	SA	272	DC	11
ALR	12	LP	20	XA	79	PDR	271	RZ	10
AHY	11	DD	19	GD	62	RG	262	ABL	1
EZM	11	EZM	18	OD	40	SAF	227	VHF/CW	
JAZ	11	KKJ	18	COZ	10	JP	245	KS	16*
KME	11	ALD	17	Individual Scores		BWI	236	ABL	2
GUS	10	BMU	17	VK5		XPS	229	HF/Phone	
TTX	10	BSP	17	(Total = 4126 pts)		KTN	221	SZ	447*
NMK	5	JI	16	VHF/Phone		TKR	212	9XZ	218
YTT	5	AGJ	15	TTY	400*	AR	201	CSW	156
		DG	14	BRC	345	GGD	177	VZ	151
VHF/CW		ATN	13	ZBK	297	GGA	157	RG	144
ACR	71*	NPY	13	THA	113	MIN	147	GW	138
KKJ	6	VCF	13	BW	85	FS	143	KG	107
HF/Phone		EWD	12	AVQ	16	TNT	132	JP	104
APC	281*	ALR	11	BCD	16	RRG	131	AR	100
DDX	195	BCZ	11	PJR	16	FJA	127	SMH	96
AHY	188	BLE	11	DH	10	HU	127	APK	82
CX	151	EKF	11	VHF/CW		SAN	127	RR	77
AEO	135	ER	11	Nil Entries		BY	124	WC	76
RC	114	CAM	10	HF/Phone		GSB	122	AI	74
GH	112	HY	5	BRC	508*	WCC	122	GGA	50
CCB	106	VKV	2			DUN	120	AFW	45

ATS	43	30M/6	14	JB	18	YW	63	HF/Phone	
WU	41	FRE	13	AJ	16	TJ	42	CR	26*
DE	40	SAF	13	WT	16	JP	41	HF/CW	
GL	36	AO	12	FK	14	BM	20	XJ	30*
SAR	33	HU	11	GA	10	PP	17		
AN	30	OV	11	Individual Scores					
OE	30	ABL	10	VK7		1HK/7	15	Overseas Entries	
OR	30	CV	10	(Total = 1738 pts)					
UW	30	GT	10	VHF/Phone		JK	13	P20VH	303*
RU	27	RZ	10	KZ	10*	RM	12	ZL3TX	271
MM	25	SAN	9	RY	4	SN	12	ZL1BGT	190
TS	25	MJC	7	VHF/CW		CHT	10	ZL1AGO	93
XA	22	FK	6	Nil Entries		HF/CW			
APW	20	IW	4	HF/Phone		VK	52*	Short Wave	
YJ	20	NOK		KZ	323*	GW	45	Listeners	
NKB	19	MAP	4	CK	258	TJ	10	HF	
3ABP/6	16	HF/CW		KC	254	Individual Scores			
DA	15	HQ	115*	NDO	136	VK8		Peter Kenyon	276
KH	14	AFW	70	OTC	114	(Total = 56 pts)			
PO	14	GW	38	HJ	113	VHF/Phone,		VHF	
YF	14	IV	26	MSM	92	VHF/CW		Timothy Lewis	
WT	14	ABL	22	NRH	64	Nil Entries		L30763 11 pts	

*C/o PO Box 2175, Caulfield Junction VIC 3161

III

Divisional Notes

Forward Bias — VK1 News

Rob Apathy VK1KRA

Our Annual General Meeting will be held in February (third Monday) and we should like to see everybody attend this important event. Our treasurer, Don Hume, is retiring and I would like to take this opportunity to thank Don for the excellent work he has done. He is one of the best treasurers that I had the pleasure to work with. We should be able to hear Don on air more often now that he no longer has to keep us in line.

While we are on financial matters, I am pleased to report that we finished the year in the black, but only just. At one stage it looked like we would close the year with a nice surplus but it was not to be. Just before Christmas, "person or persons unknown" broke into our repeater hut on Mt Ginini. While nothing inside the hut was damaged or taken, the security door repairs and necessary improvements cost over \$600. So much for our surplus!

For a number of years now we have finished the year very close to zero balance. The current committee has decided that we cannot continue to take risks of running short of funds, so, the bad news is that membership fees will have to go up by \$5.00 next year and this proposal will be put to members in February. The good news is that the Federal component will be reduced by the same amount which means no change to our members.

We have experienced some problems

with our Ginini repeater this year but I hope that by the time you read this, the problems have been fixed. Simply put, our voice repeater does not like being in close proximity to the packet repeater. The repeater group is working on the problem and service should return to normal very soon.

As far as I know, all the members of the committee have made themselves available again in 1995 but that should not deter anyone from nominating for any of the positions. I would like to thank the committee for the work they have done in 1994 and all our members for the tremendous support we have enjoyed in the last twelve months.

VK6 Notes

Peter Parker VK6BW1

Division Ends Year With Barbecue

The VK6 Division held a barbecue for its members at Wireless Hill on 18 December. Those who attended enjoyed themselves and Bruce VK6ABR, the Divisional Bookshop Officer, sold several 1995 Call Books. If you would like one, see Bruce at the February WIA meeting at the Westrail Centre in East Perth. Be there at 7 pm on Tuesday, 21 February. You pay only \$11.00 for 18,000 plus callsigns and a revised information section. As about 15% of the population move house in a given year, and amateurs upgrade their callsigns, you need this book to keep

abreast with your hobby. In addition, if you're travelling interstate, you will find the list of VHF/UHF repeaters handy.

Digital Barbecue Well Attended

About 30 members of the WA Amateur Digital Communications Association enjoyed an early morning breakfast barbecue at Wireless Hill on 11 December. Clearly the 6.30 am start did not deter many, and weather conditions were perfect.

Rockingham Geraldton Spanned on 10 GHz

VK6 10 GHz enthusiasts are claiming a new distance record on the 3 cm band. On 29 November, Neil VK6BHT at Geraldton and Wal VK6KZ at Rockingham made an epic 400 km SSB contact using equipment they had built themselves. Earlier that evening the 377 km Geraldton to Fremantle path had been bridged, but the distance was extended when Wal moved his portable station to Rockingham. The contact was repeated the following evening at reduced signal strength. Those who attended the Hamfest might have seen Neil's homebrew 10 GHz SSB transceiver at the Homebrew Equipment Competition. See Eric Jamieson's VHF/UHF — An Expanding World column elsewhere in this issue for more details of this great achievement.

Television News

Those interested in fast scan ATV are invited to join the Perth ATV Group. The aim of this small but enthusiastic group is to promote ATV activity in Western Australia. ATVers monitor 145.500 MHz

and hold a net on repeater 6750 at 8.00 pm every Wednesday. Those experimenting with transmitting or receiving amateur television will be made especially welcome. Meetings are held monthly at 730 pm on the third Monday of the month. The venue is the Media Centre in the Churchlands campus of Edith Cowan University. The group's main project is the construction of a 70/23 cm AM/FM ATV repeater for the Perth area. Steady progress is being made on this ambitious task.

Working on another ATV repeater are members of the Northern Corridor Radio Group. The repeater receives signals on 444.250 MHz and transmits on 579.250 MHz (UHF channel 35). It is proposed that the repeater will be sited at Walliston and its completion is expected later this year.

Turning to a different form of image transmission, there is some local slow scan TV activity on both HF and VHF. Perth slow scan enthusiasts swap pictures every Thursday evening at 730 pm on repeater 6800. A two metre receiver, simple modem and computer with a VGA monitor will receive the images. JV Fax version 7 shareware is normally used.

VK6s Urged to Use Ten Metres

West Australian amateurs are invited to join one of the local Sunday nets on 28.560 MHz to help populate our largest HF band. The morning net starts just after the WA Divisional Broadcast at 0210 UTC (10.10 am local), while the afternoon session begins at 0830 UTC (4.30 pm local). An initiative of the Perth (Twenty Eight) Chapter of Ten-Ten International, the net sometimes attracts interstate and DX operators when conditions are favourable. Ten-Ten International aims to promote an appreciation of our 28 MHz band. The Perth Chapter was started many years ago by Dave VK6ATE. Check in to the Ten-Ten net for details of their comprehensive awards program for 10 metre operators.

Correction

The list of office bearers of the WA Amateur Digital Communications Association, published on page 73 of the December 1994 issue of *Amateur Radio* contains some errors. The Association's treasurer is Bruce VK6ABR, and Rob VK6THB occupies the position of secretary. Clem VK6CW is no longer the broadcast officer. Apologies to all concerned.

Stop Press — 10 GHz Contact Extended to 545 km!

News has just been received from VK6KZ of a successful 10 GHz contact with VK6BHT at Geraldton. This time Wal was operating from Busselton. The over

water contact highlights the advantages of Western Australia's concave coastline between Steep Point and Cape Naturaliste, with its long over water paths ideal for extended distance VHF/UHF propagation.

Notice of Annual General Meeting

Cliff Bastin VK6LZ, President of the VK6 Division, hereby notifies that the Annual General Meeting of the West Australian Division of the Wireless Institute of Australia will be held on 18 April 1995 following the General Meeting which commences at 8 pm. The meeting will be held at the Westrail Centre, East Perth.

Agenda

1. Consideration of the council's annual report
2. Consideration of the financial report
3. Consideration of other reports
4. Election of office bearers, viz president and vice-president of the Division and seven other councillors
5. Election of two auditors
6. Appointment of a patron
7. General business which has been duly notified

Notice of Motion for the AGM must be received by the secretary not less than 42 days prior to the meeting and must be signed by at least three members.

Nominations of a candidate for election to council must be received by the secretary in writing not less than 42 days prior to the meeting, with an intimation that such candidates are willing to act. A candidate may submit a statement not exceeding 200 words outlining his or her case for election, and experience. Each nomination shall be signed by two members proposing the candidate. Candidates must possess a current amateur licence.

Proxies

Any financial member entitled to vote may appoint a proxy, who must also be a financial member entitled to vote, to speak and vote on his/her behalf. Each such proxy must be in the hands of the secretary prior to the meeting and be in the following form: I....., a member of the Institute, hereby appoint..... also a member of the Institute, to act for me as my proxy, and in my name to do all things which I myself being present could do at the meeting of the Institute held on Signed:

Witness:

Date:

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"QRM" — News From the Tasmanian Division

Robin L. Harwood VK7RH

This month sees plenty of activity resume within VK7 after the holiday break. On the weekend of the 4th & 5th there will be another WICEN exercise associated with the "Rally Tasmania event" which will be held around NW Tasmania. As the WICEN resources will be stretched to the limit, operators from other parts of the state have been requested to assist. VK7PU is co-ordinating this event in co-operation with the State Co-ordinator, Tony Bedelph VK7AX.

This event is a prelude to the much bigger "Targa Tasmania" rally which will be held in late April and is staged over five days in all regions of Tasmania. So this mini-event will be a trial run not only for WICEN but also for the rally and other emergency services for the "Targa". For further details on the "Rally Tasmania" WICEN exercise, contact VK7PU @ VK7AX BBS.

In a recent "QRM" I mentioned that a new repeater would be operational in NE Tasmania soon. Well, VK7RNE, located at Tower Hill near Fingal commenced operation on Christmas Eve on 146.725 MHz with negative offset. Preliminary reports indicate that it has a good coverage of NE Tasmania, especially in areas not covered from VK7REC further down at Cranbrook. However, VK7RNE does not service Launceston and the Tamar Valley as coverage is blocked by Ben Lomond at 5,000 feet. VK7REC does, however, cover Launceston on 146.900 MHz, also with negative offset.

While VK7RNE burst into life the Mount Barrow repeater died. Signals on VK7RAA on 147.000 MHz for the

Christmas Day VK7WI weekly broadcast were well down, which meant that VK7JG and VK7PF had to journey to the top of the Mountain on Boxing Day to re-erect the antennas. Now, Tasmania's first operational repeater is back to its old self with an excellent coverage of the northern half of the State. Thanks Joe and Peter!

Noted that the weekly gatherings at the Domain Activity Centre continued without a beat during January and attendances were well up including a number of visitors from interstate and overseas. Just a reminder that the time is Wednesdays from 12 noon to 5 pm. You will be most welcome.

On 13 December last year, I attended the Northwestern Annual Dinner, which was held at a well-known Ulverstone restaurant. Highlight of the evening was the presentation of the Joan Fudge Memorial Award. The recipient in 1994 was Phil Harbeck VK7PU, who currently is the Divisional Treasurer besides being NW WICEN Officer. One of the attendees was Helen Cunningham, VK7HJ. This attractive 16 year old is the daughter of Kirby VK7KC and Gail VK7NGC. Her brother is Dale VK7XTC. Dale and Helen attend Launceston Church Grammar School. There is yet another daughter, only 10 at present, and the whole family have been working on her to also eventually get her amateur licence. From that you can easily deduce why the VK7 division is working towards a family rate membership! Clarrie Hilder VK7HC, and another VK7 in the south of the state, recently completed a successful two way QSO on only 100 milliwatts. The frequency was 3585 kHz. Now Clarrie is working towards a QRP Devil's Award. Naturally these QRP contacts were on CW.

This month's Branch meetings in

Tasmania will be Annual General Meetings. The Southern Branch AGM will be on 1 February at 8 pm at the Domain Activity Centre and will be followed by the monthly General Meeting. The Northern Branch AGM will be held at the Launceston Institute of TAFE, Alanvale Campus, Block "C" Room 17 at 7.30 pm on 8 February. The monthly General Meeting will follow. The Northwest AGM will be presumably at the Penguin High School on the 14th at 7.45 pm. Incidentally, the Northern and Northwestern Branches will again be getting together at Deoraine on 14 March for a combined meeting.

Well, that concludes the column for this month. Until next time the very best of 73.

ar

WIA News

US Amateur In Congress

During the recent United States elections, an amateur was elected to the US House of Representatives, Congress.

David Funderbunk K4TPJ, a Republican, represents North Carolina's second district, taking over from a retiring Democratic Party member. The *ARRL Letter* reports that Funderbunk was first licensed at the age of 15. He holds a PhD in history, with expertise in East European and Russian studies and taught at several North Carolina colleges before being appointed in 1986 by President Reagan as US ambassador to Romania.

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Education Notes

Brenda M Edmonds VK3KT* Federal Education Coordinator

Over the last few months I have been exchanging information with the Radio Society of Great Britain (RSGB) on the basis of a letter in one direction or the other each couple of months. A package recently received included a copy of the first "AMRED" magazine, a production of the STELAR Group. "STELAR" stands for "Science and Technology Through Educational Links with Amateur Radio", and "AMRED" for "Amateur Radio in Education".

This magazine, although only about twenty pages, contains much of interest to persons concerned with amateur radio in educational institutions. The back cover lists about seventy schools or universities which were affiliated with STELAR at the date of publication in May 1994. Of them, nearly fifty hold callsigns, and many have BBS identification.

Articles include:-

- a report on a training course to introduce amateur radio to teachers;
- a description of a packet radio set up at one school;
- a long article about the establishment and use of a link from Harrogate Ladies College to the MIR station whilst the first British astronaut was on board (including a trip by the author to Moscow to complete the arrangements);
- information on WeberSat (WO-18) which provides materials for scientific study (eg solar and earth spectra, earth photographs, meteor impact detectors);
- an article on possible uses of amateur radio satellites in education; and
- an explanation of the then relatively new Novice licence.

With an Editorial and a Letters page, you will agree that a lot of interesting information is packed into a small space.

It is very encouraging to see so much activity in the schools and the degree of involvement of the younger generation, and to see this activity supported by the national Society. The RSGB provides an annual award for the Junior Amateur of the Year, and publishes a magazine for Novices.

Obviously, the differences in area and population size between Britain and Australia are some of the factors which account for the differences in recruiting patterns between the two countries. However, from other comments received it is apparent that the deciding factor in the introduction of amateur radio to a school is the drive and enthusiasm of one

or more teachers at that school.

I have asked previously for news of what is happening in Australian schools, but have received little in reply. I am still interested. If there are any members who have the interest and opportunity to set up amateur radio in a school, the same letter from RSGB also included notes on some school activities in America. I am sure the originators of these ideas would

be only too happy for their ideas to be used and perhaps extended by amateurs in Australia. There can be much more to a school amateur radio station than just calling "CQ" and talking.

I know that there are a few amateurs who have developed very effective and ambitious programs within their schools. I would be very pleased to offer these enthusiasts the space in this column to present reports on their activities and achievements. It is a field about which too little is known, and those who are doing this good work deserve the recognition of their peers. *PO Box 445, Blackburn VIC 3130

BT

FTAC Notes

John Martin VK3KWA, Chairman, Federal Technical Advisory Committee*

More New 10 GHz Records — Including Another World Record

Last month I announced a new world record for an EME contact between VK2ALU and WA7CJO. Since then there have been a number of new state and national records for terrestrial 10 GHz contacts, including a new world record.

The first was a contact between Russell Lemke VK3ZQB at Moonlight Head and Trevor Niven VK5NC at Cape Banks on 11 December 1994. The distance of 267.7 km is a new Victorian 10 GHz record. This was followed by several contacts between VK5NC, VK5NY and VK3ZQB which between them appear to create two more VK3 records, two more VK5 records, and two new national records.

In addition, news has been received of a 10 GHz contact between VK6BHT and VK6KZ. This contact between Perth and Geraldton will be a new VK6 record and also breaks the previous national record. Claims for these contacts have not been received yet so it is not possible to give precise distances.

Finally, VK5NY worked VK6KZ on 30 December 1994. The distance has not been confirmed yet but it appears to be a new world record for terrestrial contacts on 10 GHz. So it appears that Australian amateurs now hold world records for terrestrial and EME operation on 10 GHz.

Congratulations to all those involved in these contacts.

Data Base Update

Some more information just received. Amend your 1995 Call Book.

- Alice Springs ARC has advised that the VK8BRAS beacons are not operating.
- The VK3RXX beacon is now testing on 1296.530 MHz with a vertical antenna.

- The Canberra beacons on 144.410, 432.410 and 1296.410 MHz are back on air from a site east of Michelago, with an elevation of 1400 m. Power is 14 W on 2 metres, 12 W on 432, and 2 W on 1296. All beacons identify with FSK and use crossed dipoles.

- The VK7RNN beacon is now in operation on 432.474 MHz.

- In the repeater list, VK3RGO should be deleted and a new repeater added — VK3RTU at Mt Taylor, near Balmoral, on 439.525 MHz. In footnote 2, replace VK3RGO with VK3RTU.

Packet Stations in 80 m CW segment?

A number of amateurs in NSW are concerned about interference to CW contacts from what appears to be a packet net operating around 3520 kHz. The digital segment of 80 metres is 3620-3640 kHz. It would be appreciated if packet operators could keep an eye on 3520 kHz and ask any packet stations there to please avoid interfering with CW stations.

5 Metre DX Window

A submission has been presented to the SMA for an expansion of our 5 metre DX window in the eastern states.

Packet Radio Band Plans

Agreement has been reached on the proposed changes to the packet radio band plan for 2 metres and 70 cm. The main changes are an expansion of the 2 metre packet segment to 145.200 MHz, and frequency pairs for regenerative repeaters on 70 cm. The SMA has agreed to make the full 144.700-145.200 MHz segment available to Novice and Novice Limited stations from the date on which their packet privileges take effect.

*PO Box 2175, Caulfield Junction, VIC 3161

BT

How's DX

Stephen Pail VK2PS*

These lines were written in the last dying days of 1994. One wonders what the New Year will bring? More DX? Better propagation? Unexpected, unpleasant developments in the Australian amateur world?

Yes, the last one is going to happen, unless you — the amateur-voter, the user of the spectrum, as allowed by international treaties (ITU) — do not protest!

Our masters in Canberra, the SMA (Spectrum Management Agency), a federal government administration arm, intends to give you, the user of the spectrum, a nasty new year present. The timing is politically perfect. The news reached us just before Christmas when the average taxpayer-voter is busy with festivities, cricket, sailing, beach, annual holidays and does not want to hear and care about politics.

In the insert to January issue of *Amateur Radio* you can read all the details of the intended increase of amateur licence fees. After you have digested all the gobbledegook (according to the

dictionary this means a language characterised by circumlocution and jargon) it will dawn on you that the Government wants more taxes from a group of 18,000 plus amateur-voters, whose vote in an upcoming election can be totally ignored. You will also note that the Citizens Band (CB) licence in the future will be free. Yes, it will cost nothing! There are hundreds of thousands of CB licences in Australia which represent so many hundreds of thousands of voters. Therefore your vote is important.

I hope that you, the average Australian amateur-voter, also know that in the USA you are given a ten year amateur licence free of charge. Not a dollar is paid for it! All the USA amateurs fit into the same spectrum space, all 660,000 of them, as the 18,000 Australian amateurs.

Please digest and try to understand the meaning of the new concept of "issue/reissue costs". Do you remember when it was said that computers will reduce costs? You must not confuse the Spectrum Maintenance Costs (SMC) with the cost of repairing the plumbing or

roofing or painting of your house. This SMC is the ongoing cost of the SMA for which you are expected to pay. These costs include wages, fringe benefits, car use, flexidays, sick days, stress leave, holiday pay, long service pay, training costs, overtime, workers compensation costs, superannuation costs and tea or coffee break costs of the public servants who are the SMA personnel.

Spectrum Access Tax (SAT) is not a satellite, it is a TAX. Tango Alpha Xray. TAX! There is no other meaning for it. It is a TAX for a spectrum space used by you the amateur-voter. Spectrum space which the government can take away from you unless you pay the tax, despite the international treaties. Do not forget, the Government has the power to ban amateur radio. The fact that the spectrum used by you has no commercial value on exclusively HF international amateur bands is ignored by the decision makers.

These decision makers apparently are not aware of the valuable community service provided free of charge by amateur-voters, like vital communications links during national disasters. Cyclone Tracy, Newcastle earthquake, bushfires and floods are just a few examples.

What can you, the average amateur-taxpayer-voter, do to minimise the licence

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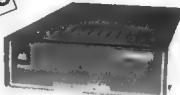


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Jaime EAGNE, the well known Spanish DXer.

fee increase from \$36.00 a year to \$69.00 a year, a 92% increase?

You can write a protesting letter against the increase to your federal member, to the senators representing your state, and to the leaders of other minority parties. Write or fax and put your argument

properly. Write today! Not tomorrow! Not next week! The new fees will be introduced on 1 March.

The above is my personal view. It may not make me popular in certain circles. It does not necessarily represent the official WIA policy

Jordan — JY

King Hussein, the well known amateur with the callsign JY1, is bringing the new peace accord with neighbouring Israel to a level that even includes amateur radio. The Israeli ham radio publication, "Ha Gal International" reports that the Jordanian monarch recently held his first recorded contact with an Israeli youngster whose callsign is 4Z9FHB. "Ha Gal" also reports that the thawing of relations between the two countries has already led to discussions between their respective amateur radio societies on matters of technical cooperation and DXpedition planning

Antarctica

- Eddie VK4EET is active as V10ANT until March 1995, mostly on CW and mainly on the low bands. Look for him around 1130 UTC to about 1630 UTC on CW on frequencies of 3502, 7005, 14005 and 21005, or on SSB on 3798, 7070, 14190 and 21295 kHz QSL to Eddie De Young, 131 Plantain Road, Shailer Park, QLD 4128.
- Phil VK4FPS is active as VK0FPS, QSL to VK3MA.
- Lance VK7ERZ is active as VK0ERZ. He will be active until March 1995.
- Gavin VP8GAV is now at Fossil Bluff.

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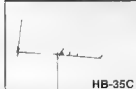
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TE-56 3-ele beam on 14-21-28MHz 2-ele on 10-18-25MHz ..	\$950



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a British base in the Antarctic. QSL to GM0LVI.

- Luciano IQJBL and Filipo IK0AIH were active as IA0PS in December from the Terra Nova Bay area (74° 42' S, 164° 12' E) QSL to IK0USA. They were using 1 kW into a rhombic antenna and were heard with an S9 signal in Sydney.
- KC4/K7ANW is also active from a US seismic research station located at 82° S, 118° W.
- VK0IX is working from Casey Base, mostly VHF with a beacon on 50.2 MHz. QSL via his home call VK5IX.

To those of you who are chasing "wallpapers" may I recommend the WIA Antarctic Award. Applicants need to make ten confirmed contacts with amateur stations conducting valid operations from Antarctica. The ten contacts must include at least six different government authorities and at least one contact must be a VK0. Antarctica is defined as the land mass including islands and permanent ice shelf below 60° south latitude (this excludes Heard and Macquarie islands which are sub-antarctic areas). Only contacts made on or after 23 February 1988 are valid for this award.

Palestine — ZC6 (?)

It came as a surprise to hear the old British mandated territory's call sign again on the air. The prefix ZC6 used to refer to Palestine before 30 June 1968, from when the DXCC deleted Palestine as a separate country. ZC6B came up on 14243 kHz on Selim's (OE6EEG) net early in December as a list operation. Since then he has reappeared from time to time on the 14243 or 14250 nets.

Early reports said that the operation was a joint venture DXpedition from Gaza by Israeli and Jordanian amateurs. Later reports from Israeli sources denied this. The Ohio/Penn DX Newsletter reports that Larry W4RA, IARU Secretary, received a fax from the "Palestine Amateur Radio Association" with information which may shed some light on the call sign being used. The fax contained a newspaper article dated 12 December 1994 from the "Al Quds" newspaper stating that the call was issued in 1948 to Dr Sami Tarazi but never used because of the war which broke out.

A later report said that the Palestine Amateur Radio Club (Association) had invited JA1UT and JA3UB to help set up a station and to operate. The operator behind the ZC6B call sign was Sami and his QSL address is Dr Sami Tarazi, PO Box 1008, Gaza, Palestine via Israel. There is no doubt that Palestine will reappear in the near future as a new country once all the outstanding political



A51MOC Bhutan (l to r) Jim VK9NS, Buthanese officials Phub and Tshering, and Ken JA1BK.

issues are resolved. The present situation poses a number of questions. Will Palestine be a new DXCC country or will it be a resurrection of a country from the deleted list? Will it keep the ZC6 prefix which presently belongs to the United Kingdom and Northern Ireland under the ITU allocation of ZBA-ZJC or not? What will be the starting date of the recognition? Only the future will tell.

Glorioso Island — IOTA AF-011

Jacques FR5ZUG was active from Glorioso island from 17 November until 1 December. Glorioso is quite a difficult place to reach from VK, especially from VK4 and VK2. A further difficulty is that the operators are active in their evening local time which is well after midnight on the East coast of Australia with changing propagation at those hours. There are two QSL routes for Jacques. Europe and USA to VE2NW and Asia to JA8FCG.

Jacques left Glorioso but Henri FR5ZQG stayed behind and appeared a few times for a thirty minutes stay on the Southern Cross DX Net (14226.5 kHz at 1100 UTC) working a list. For the FR5ZQG operation, QSL Henri direct at the address given later in this column.

United Arab Emirates — A61

Don Greenbaum WB2DND, who often visits the United Arab Emirates on business trips, reports that the PTT authorities of the UAE have approved the issue of three more amateur licences. Two of the new licence holders are "graduates" of the Club Station at the

Dubai Men's Technical College. These are the first licences issued in about a year. A61AH is Al Mur Al Mohiri, a pilot. His address is PO Box 4800, Dubai, UAE. The other is A61AN, Nasr Fekri. Nasr is in his early twenties and works in the new Dubai Hospital. He is an experienced operator. His QSL goes to PO Box 53656, Dubai, UAE.

The third licence is for A61AI. It will be issued as soon as the applicant picks it up from the authorities. Incidentally, Don WB2DND made about 1700 contacts in four evenings.

Future DX Activity

- DP1KGI will be operated by Thomas DL7VTS from South Shetland until 31 March.
- HF0POL, starting mid-December, is also operating from the Shetland Islands. Henry SP3FYM will be on the air presumably until the end of 1995. He will pay special attention to RTTY and 160 metres. During his stay in 1990-1991 he made about 25,000 QSOs.
- 9Q5IY LA9IY is active from Zaïre for three months during a tour of duty with the United Nations. QSL to LA1K direct only, because he is not a member of the LA Bureau.
- 9X5EE Alex PA3DZN is now licensed in Rwanda. QSL to PA3DLM.
- Peter KC1QF intends to visit Mt Athos during the northern summer. He hopes to receive the call SV0GVA and intends to operate SSB, CW and RTTY. He will carry wire antennas, batteries,

and 82 W solar cells plus a TS50S and will operate from a height of 6000 feet. Peter says he is a Greek citizen and of the Orthodox faith and he thinks that these facts will provide freedom of entry for him to Mt Athos.

- Tom DL7UTM was going to be active from the Maldiv Islands during the Christmas period. This plan has now been changed. He will be operational as 8Q7XO during March/April.
- Bernhard DL2GAC (H44MS) and Norbert DJ9RD were active from the western Solomons in the second part of January on SSB, CW and Pactor. They used a TS50S and a 400 watt amplifier. QSL to home calls.
- A Swedish Amateur Radio Club (SK3JR) will be promoting Sweden as a possible candidate for the winter Olympics in 2002. The special call 7S3OWG will be active from January until 16 June 1995. QSL to SM3CVM

5052 Tour La Chaumiere, Saint Denis, 97400 Reunion Island via France.

- A92BE — Don — 14200 — SSB — 0550 — Nov (E). QSL to Sheridan K Street, Box 26803, Manama, Bahrain.
- IA0PS — Luc — 14204 — SSB — 0715 — Dec (E). QSL to IK0USA, Paolo De Michetti, Casella Postale 9047, 1-00167, Roma, Italy.
- A61AC — Mohamed — 14250 — SSB — 0630 — Dec (E). QSL to ON7LX, Carine Ramon, Bruggesteeweg 77, B-8755, Ruiselede, Belgium.
- 8R1AK — Esmond — 7083 — SSB — 0936 — Dec (E). QSL to Esmond L Jones, PO Box 10868, Georgetown, Guyana, South America.

From Here There and Everywhere

It is said that to catch the rare DX one has to be on the right band at the right time with good propagation and with "lady luck" on the side. This happened to Merv VK4DV. Merv is the only VK, to my knowledge, and one of the very few in the world who worked the XY1HT, demonstration station from Myanmar (see Nov and Dec *Amateur Radio*). Writes Merv, "I heard XY1HT calling for propagation reports. He also stated that he wanted stations outside South East Asia. I was lucky enough to call him on the back of the quad on SSB for a 5x4 report. He was not very strong here but he came back with the same report. He did not have many takers at all. From the short QSO it appeared that I spoke to the G operator. When I first heard the call I had no idea where it came from. I first thought that it was a special event station from Europe, but when I looked up the international ITU prefix allocations in the callbook I could hardly believe my eyes." Congratulations Merv, you landed a rare one.

- Dave WX3N advises that he is the QSL manager for the following stations: 8Q7WA, 8Q7WX, AA9AK/AH2,

AG9A/AH2, AH2U, KC6XX, KJ9W/KH2, VR2/WX3N, 8Q7WQ, AA9AK/WH0, AG9A/WH0 and VS6/AA9AK.

- I was pleasantly surprised when I received a QSL card directly from Antarctica. Paul VK0CS sent his QSL card from Casey Base (110° 31' E, 66° 17' S). The envelope had the standard Australian postage for internal mail of 45 cents with an Australian Antarctic Territory stamp on it and the post office cancellation stamp reads "Australian National Antarctic Research Expeditions, Casey, 3 Nov 1994". The envelope arrived on 6 December for a QSO on 27 February 1994. Paul's home call is VK2GMI, and his address is Paul Hansen, 16 Rotuma St, Oakhurst, NSW 2761, Australia.
- John VK1PG reports that he had a CW contact at 2051 UTC on 14033 with ST2AA in Khartoum. Lou is an Australian and left VK5 in 1975. He is anxious to have QSOs with VKs around his evening local time, which would be 1800 — 2000 UTC. His full name is Louis Szordy and QSL is via WB2RAJ.
- Did you know that the Harvard University Wireless Club is America's oldest radio club, established in 1909?
- Meralda VR6MW was missing from the bands. She spent some months in New Zealand for health reasons. "We are so far away when help is needed", writes her mother, Mavis.
- The QSL cards for HV3SJ, operated by Father Edward Schmidt W9SI, should go to 10DUD with two IRCs.
- 9K2F was active from Faylakah Island, which is located about 25 km NE of Kuwait City, from 15 to 18 December. QSL to 9K2RA.
- C56/G0MRF is not listed in the 1994 callbook. Direct QSLs go to G8PDW.
- Recently there was some CW activity from Syria by seven American amateurs. The activity took place with the help of Omar YK1AO. The callsign

Interesting QSOs and QSL Information

E = East Coast, W = West Coast, M = the rest of Australia.

- 9N1SON — Jack — 14024 — CW — 1109 — Nov (M). QSL to W4SON, Jack W Rucker, Box 837, Jamaica, NY 11430, USA.
- 72500 — Mike — 14012 — CW — 1330 — Nov (M). QSL direct only to W1AF, Harvard Wireless Club, 6 Linden St, Harvard University, Cambridge, Mass 02138, USA.
- J28F — 14022 — CW — 1214 — Dec (M). QSL to PO Box 1076, Djibouti, Africa.
- 9K2WA — Ali — 14192 — SSB — 0527 — Nov (E). QSL to PO Box 25020, Safat — 13111, Kuwait
- 9N1ARB — Dick — 14227 — SSB — 1248 — Dec (E). QSL to PO Box 25, Kathmandu, Nepal
- FR5ZQ/G — Henri — 14226.5 — SSB — 1339 — Dec (E). QSL to Henri Namtameco, Rampe De St Francois,

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Bhutan, November 1994. Amateur radio activity by a Bhutanese operator, Phub, assisted by Kan JA1BK.

used by the Americans was YK0A. QSL goes to W6OAT. The prospects for future CW operation are better than they were before. A complete amateur station was left behind and there are several other operators keen to begin DXing. The Americans report that they were treated very well and with great kindness by the Syrian people. They made 15,000 QSOs, 75% with Europe.

- If you worked V18TRACY, commemorating the destruction of Darwin by the cyclone as indicated by the suffix of the callsign, for a \$5.00 donation, the Darwin Amateur Radio Club will send you a special certificate. The address is DARC, PO Box 41251, Casuarina, NT 0811
- Ray AB4JI approached the relevant authorities again to operate from Desecheo Island, KP5. However, he was told that no amateur radio is allowed from the islands at present.
- I am sure many DXers remember Alan VK8AV from Alice Springs. I have not heard of him for a couple of years. The other day VK4IV called me on CW. It was Alan who has now settled in the Brisbane area.
- The proposed December ZL5/Balleny Island DXpedition has been postponed to a date sometime in 1995.
- Various DX publications report the following pirates or unauthorised activity. Save your money and do not QSL 9V/SV28BJ was active, but has no permission to operate. SU2CW asked to send the cards to DK7PE.

Rudi knows nothing about that station A51NS was an illegal operation. 5A0/DL7FT and ST0CW are very doubtful. 3V/JA2MAO was a pirate, as was YA7NEL asking for cards to JA6NEF. The call D2SA has been pirated extensively during the last week or two on CW, with various pre/suffixes including TN and 3C. The real D2SA does not operate on CW. 3V8UJ, asking for cards via W4DE, was very doubtful. F6EEM said that the calls FR/F6EEM/T, TM2YT and 3A/F6EEM were all pirates.

- According to unconfirmed sources the planned Kermadec Island activity for March 1995 has been cancelled. Barry G4MFW, whilst he had a licence to operate, failed in his attempts to secure a landing permit from the relevant New Zealand authorities.
- Tunisia 3V was active during November and December. Four Japanese operators (JH2CFD, JF2EZA, JR2RVL and JL2OYI) assisted to set up a club station. According to some reports the Club Station is in a high school in Bir-El-Bey town. The Japanese operators were instructing the locals and, according to some reports, a few trained operators will continue to be active after the Japanese leave. QSL goes to JF2EZA.
- The Krenkel Central Radio Club of Russia sent a circular to all QSL Bureaus of radio amateur organisations advising that Box 88

(phone +949-52-21) Moscow is still very much alive. They admit, however, that for some time past the number of incoming QSL cards has sharply fallen. They also point out that, whilst the Krenkel Central Radio Club of the Russian Federation has more than 30,000 members and whilst they claim to be the successors of the former Radio Sport Federation of the USSR, the recently formed Union of Radio Amateurs of Russia (SRR), Box 59, Moscow counts only about 4000 members. The latter, however, has been admitted as a member of IARU. The Krenkel Club assures us that they possess moveable property, transport, staff members and the necessary organisation to sort and send amateur mail (QSL cards) in good time and regularly. They also allege that the opposition organisation does not regularly forward cards. So there you are. Competing QSL bureaus in Russia. One has to remember also that the other, now independent, republics also have their own QSL Bureaux.

- Bill VK4CRR was heard operating portable from Cato Island in December in the Coral Sea Group (23° 15' S, 155° 32' E).
- There is a rumour that DU0K will be operating soon from Spratly Islands.
- Here are the latest decisions of the ARRL DX Advisory Committee (DXAC) advised in a news release dated 2 Dec 1994. The DXAC has voted 14 to 2 against a petition to add Austral Islands and the Marquesas Islands to the DXCC countries list. The DXAC voted 14 to 1 against adding the Balleny Islands to the DXCC countries list. The DXAC voted 13 to 2 against recommending the establishment of a DXCC award for contacts made whilst operating mobile

QSLs Received

G13OQR (12 w op) — VK8ISL and VK8ISL (10 w VK8LC) — VR6MW (10 w op) — 5T5JC (3 w F6FNU) — VK0CS (10 m op)

Thank You

Many thanks to my helpers without whose support this column would face real difficulties. Special thanks to VK1PQ, VK2DSL, VK2KCP, VK2KFU, VK4AAR, VK4DV, VK4XW, VK6HD, DL2GAC, KI1YD, PA0LEG and WX3N, as well as the following sources of information, The Krenkel Central Radio Club of the Russian Federation, QRZ DX, The DX Bulletin, The DX News Sheet and The W6GO/K6HHD list

73 and Good DX

*PO Box 93, Dural NSW 2158

ar

WIA News

WIA Action on Proposed Licence Fees

The following item, from WIA Federal President Neil Penfold VK6NE, was sent to Divisional broadcast officers in the first week of January.

Since the SMA explained the proposed new amateur licence fees to us early in December and we arranged to distribute the information as rapidly as possible through the various means at our disposal, the WIA has not been idle.

But, before outlining developments, I should dispel some erroneous concerns that many amateurs have raised.

The proposed new fees were revealed to the WIA's SMA Liaison team FOR THE FIRST TIME on 5 December. The information was embargoed from public release by the SMA until 14 December when they put full licence pricing policy details before representatives of all the other spectrum users at a meeting of the Radio Consultative Council in Sydney.

Text for the insert which appeared in your January issue of *Amateur Radio* was finalised on the morning of 14 December, and flown to Melbourne to be printed and inserted in the magazine the following day.

On 15 December, the text of that insert was issued to the packet radio network.

The WIA's SMA Liaison team and the Federal Council has been monitoring reaction and formulating plans to put a well-argued response to the Spectrum Management Agency.

It should come as no surprise that, fundamentally, the WIA is opposed to a number of aspects of the proposed new fees, in particular, the Spectrum Access Tax.

As a result of discussions within WIA Federal, on 30 December I authorised a press release to be issued to the media so that, hopefully, the licence fee issue could be more widely disseminated, particularly with a view to reaching non-members of the WIA and other interested people and groups.

Fortunately, it caught the attention of the media, receiving national coverage on radio and television on Tuesday, 3 January, a story and picture on page three of The Age newspaper the same day, and subsequently on a number of Victorian radio stations, as well as stories in metropolitan and regional newspapers.

As I said, the WIA is monitoring reactions to the proposed licence fees and to say the response has been overwhelming would be an understatement. It has been most welcome.

The WIA plans to put the strongest possible case to the SMA, reflecting the views of members and non-members alike, but there has been only a short time since the information was made available and there is only a short time frame in which we can negotiate before the deadline of 1 March.

It should be obvious that only reasoned argument will win the day and the WIA aims to take that course in developing a case to negotiate with the SMA.

On behalf of the WIA, and the amateur fraternity at large, I would like to thank all those who have taken the time and made the effort to put their views.

Neil Penfold VK6NE, WIA Federal President.

The press release of 30 December was issued from Sydney to the five national television broadcast networks (2, 7, 9, 10, SBS), Australian Associated Press, some of the radio broadcast networks, national print media, all capital city metropolitan daily newspapers and Amateur Radio Action.

Copies of the release were also sent to the Spectrum Manager, Christine Goode, the Minister for Communications and the Arts, Michael Lee, the Shadow Minister for Communications, Senator Richard Alston and his counterpart in the House of Representatives, David Kemp.

The Age newspaper in Melbourne was the first to pick up on the press release, running the story mentioned above in their 3 January edition. This seemed to have sparked the interest of other media.

WIA Victoria President, Jim Linton VK3PC, was kept busy dealing with news media inquiries. It began with The Age needing a photograph to go with their story written from the WIA press release. Ray Cowling VK3ACR readily volunteered for the photo.

Jim VK3PC fronted the television cameras for both Channels 9 and 10, which gave excellent coverage in the evening news on 3 January. With a number of TV appearances over the past decade, he was able to clearly explain the arguments against the Spectrum Access Tax. Rob Carmichael VK3DTR kindly made his shack available for the TV interviews.

John Hill VK3WZ also received media calls, including ABC Radio National, who had his name in their contact book. They had previously interviewed him during the Gulf war.

The West Australian newspaper in Perth, picking up on the Channel 9 TV news item, contacted Federal President Neil Penfold to ask why they had not been sent a release. He was able to inform them that it had been faxed to the Chief of Staff on 30 December.

Many local metropolitan weekly and regional newspapers picked up on the earlier media stories, as did radio stations, particularly in Victoria. One radio station, 3CR in Melbourne, following an item on its Friday morning breakfast program, reported receiving a number of calls from people enquiring about how to get their amateur licence and where to contact the WIA.

The Gold Coast Amateur Radio Society in Queensland also managed to get a prominent story in their local paper.

Background to the licence fees issue was first published in the March 1994 issue of *Amateur Radio*, on pages 21 and 22, in a WIA News item covering the SMA Apparatus Licence Inquiry. An insert reporting on the Inquiry was in the same issue.

Federal President Neil Penfold wrote to the Spectrum Manager, Christine Goode, early in January seeking a specific meeting for the WIA to negotiate with the SMA on the licence fees.

Over to You — Members' Opinions

All letters from members will be considered for publication, but should be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents.

Novice Articles

Instead of blasting the WIA Amateur Radio magazine for not filling its columns with novice-related articles, it might pay B Thirkell VK1PBT (*Amateur Radio* magazine, January issue) to take out a subscription to *QST*, the world's oldest amateur radio magazine.

Here every month there is a special section of at least ten pages, often more, with a host of features for the novice.

Not only will these articles fulfill his needs for top novice-related articles, but they will give him a chance to explore all facets of this great hobby of ours. The November 1994 issue ran to 280 pages.

It amazes me how few VKs subscribe to this journal. Why?

Roth James VK1BG
23 Cherry Tree Grove
Croydon VIC 3136

(I suspect the answer to your final question, Roth, is that many amateurs, Novice or otherwise, feel that they cannot afford the cost. Ed)

ITV

After fifteen years of sterling service my old National TV set finally died so, in an uncharacteristic fit of self indulgence, I bought myself a new Sony KV2966 68 cm stereo TV set.

That night in bed, listening to late-night talkback as is my custom, I noticed curious birdies about every 130 kHz up and down the broadcast band. I fell asleep moderately perplexed.

The next day I did some investigation. Lo and behold, strength nine raspberries, about 135.3 kHz apart, covering the entire HF spectrum up to 30 MHz. The culprit? My new \$2,200 TV set!

Amateur Radio has been pushing EMC/RFI down our throats for years now. Haven't the commercial manufacturers heard of it?

Is this the apotheosis of 1990s hi-tech?

Al Rechner VK5EK
PO Box 12

Old Noarlunga SA 5168

(Did you leave the TV on all night, Al, or was the interference present even when nominally "off"? Ed.)

Disagreements or Problems

Reference the Bruce Hedland Thomas comment about Quaker talkathons in the December Federal QSP. If our councillors are considering the Quaker method for resolving disagreements, I remind them it is only suitable for that purpose, it is

useless for problem solving. Problems require a process of logical reasoning applied to the evidence; so don't abandon your gift of reasoning in favour of the gift of the gab.

Interference problems are technical and require technical solutions based on consideration of the technical evidence. SMA appointed consultants, arbitrators and conciliators should be suitably qualified technical persons; if an amateur is not satisfied that the outcome of an investigation has resulted from the technical evidence he should appeal to an ombudsman and, if necessary, the courts. It would not be unreasonable for him to expect legal and financial assistance from the WIA for that purpose. A compromise might satisfy the affected parties at the time but it could set a prejudicial precedent.

Lindsay Lawless VK3ANJ
PO Box 760
Lakes Entrance VIC 3909

WIA Exam Service

For some time now I have been assisting students to gain their various Amateur Operating Certificates and, during this time, I have been able to see just how the WIA Examination Service works.

I was very impressed with the administration of the system and the consideration given to the students when sitting for their exams.

The advantages of the WIA system are:-
a. Examinations are now held on average at least once a month instead of the three month interval under the former DoTC system

b. Venues are, in most cases, locations such as the local radio club meeting halls, etc which are usually familiar to the students. Furthermore, the examiners are well known to the students and, in such circumstances, an informal atmosphere prevails which must help to settle the students' examination nerves.

c. Students sitting for the Morse tests can use their own keys or oscillators and are given ample opportunity to practise sending a small piece before the test and also listen to a Morse tape for a short period. What more would you want?

d. Formerly, students at distant locations would have to travel considerable distances to sit for an examination, whereas now locations can be more conveniently placed.

e. When the exam results are sent to

the WIA for confirmation, the students can be assured of a speedy turn-around, getting their results in a few days. The DoTC used to take much longer than this.

The WIA Education Officer, Brenda Edmonds, and her helpers are to be congratulated on a smoothly running devolution of the examination system from the DoTC to amateur control.

I know there are awards made by the WIA for the best articles published in *Amateur Radio*, but what about an ACHIEVER Award for the year? I, for one, would nominate Brenda Edmonds for that award, for a magnificent job well done.

Although, seeing that the Examination system is going so well, why don't we look further afield and export it to our Asian neighbours (at least)? Tertiary institutions do similar things, why not the WIA?

Still another thought. To cater for our distant students and the incapacitated ones, it would be very useful if some of our experts in the remote student education field could introduce a correspondence course for amateur students. It would be a big task, I know, but maybe it is not impossible.

Perhaps there may be a niche market somewhere in the above thoughts, perhaps just to help reduce our current account deficit!

Well done, Brenda. The amateur organisation owes a lot to your undoubted ability and zeal in the amateur education field.

Quintin Foster L30720
77 Church Street
Beaumaris VIC 3193

(Brenda is grateful for your praise, Quintin, but hastens to attribute most of the Exam Service success to the organisational ability of Bill Roper VK3BR during his time as General Manager. Both were employed by the WIA at that time. Ed)

Licence Fees

I am writing to express my opinion about the new SMA pricing policy for amateur radio licences.

The insert in January *Amateur Radio* was an excellent description of the SMA's policy but it gave no indication of what response the WIA would make to it. However, I would deduce that, because the SMA said it was a pretty good deal and the WIA made no comments to the contrary, the Federal WIA accepts that, or at least Roger Harrison does.

The new policy is a revenue raising (taxation) strategy in keeping with its previously well publicised commercial management of the radio spectrum. The fact is that an unrestricted amateur will pay about 100% extra for a licence.

It may be argued that fees will decrease if we swell the ranks but under this policy

the ranks may well diminish and then fees will increase. There may well be a lot of half hearted hams who, at double the price, don't bother to renew their licences.

The fact is that the Amateur Radio Service is basically a hobby, but is being priced on a commercial basis and that the adoption of this policy is **THE THIN EDGE OF THE WEDGE** for the service.

The policy does nothing to foster the amateur service which is an asset to the community, particularly in times of emergency and natural disaster.

I have written to my Federal Member of Parliament protesting these charges and feel much valuable time has been lost because of the one calendar month it took to receive this information.

If the WIA is continuing discussions with the SMA then I expect that they be very firm discussions with the interest of amateur operators at heart.

ERIC WILLIAMS VK2ID6

30 George Street

Springwood NSW 2777

Fee Increases

(Copy of letter sent to SMA)

I have received an advance copy of your new charges relating to amateur radio.

I attended the seminars in Adelaide in 1994 and I wrote a submission input to you (as did many others). You acknowledged receipt of the letter.

Suddenly, without warning, you have announced a **FEE INCREASE OF OVER 100%**.

The seminar was told a **SMALL** fee increase was the "worst case" scenario but the more likely settlement would be a fee **REDUCTION**.

There are NO licence fees for the CB bands and you allow them to be used commercially.

Amateur radio operators are really that. **AMATEURS** providing a very valuable service **FREE OF CHARGE** to Darwin Cyclones, Ash Wednesday bushfires, NSW bushfires, etc.

We provide services to Camp Quality, Guides and Scouts groups, training for Australian Armed Forces and industry in general.

Were it not for the amateurs, you and the general public of the world would be less well served.

Adding insult to injury you never replied and, I suspect, never applied the submissions to the recommended 100% fee increase.

Now you are saying the amateurs have been given a **GOOD DEAL!**

You can be assured I am **UPSET AND VERY ANGRY** at your **SNEAKY** approach. A sniper in the trees couldn't have done it better.

Mervyn V Miller VK5MX

31 Rickaby Street

Croydon Park SA 5008

(The above two letters are typical of the many letters received so far on the licence fees theme. Regrettably, while all displayed tremendous indignation, most were too long to print here. Ed)

Update

Back to Basics 40 or 80 m Receiver

Neville Chivers VK2YO, the author of the above article which appeared on pages four to six of the January 1995 issue of *Amateur Radio* magazine, points out some errors in the circuit diagram, Fig 1.

1. The VFO buffer amp should read MPF102 and not MFP102
2. The BFO trimmer should read 3-30 pF, not 3.3 pF
3. The AM line from the first IF transformer should bridge the filter and not connect direct to G1 of the MFE131 IF amp.
4. (The most important!) The drain of the MPF102 product detector should connect to the 12 V rail via a 1 k resistor at the junction of the .002 capacitor and the 1000 μ H RFC.

It might be a good idea to correct your copy of the January issue of *Amateur Radio* NOW!

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WIA News

EMC Compliance to be Set Back?

The Australian Telecommunications Industry Association (ATIA) has proposed to the Spectrum Management Agency that the 1 January 1996 date for the introduction of the "EMC Regime", requiring that electrical, electronics and telecommunications equipment sold or manufactured in Australia meet mandatory spurious emission levels, be put back 12 months.

The ATIA is the representative body for the Australian telecommunications equipment industry and is affiliated with the Australian Electrical and Electronics Manufacturers Association (AEEMA).

Their January newsletter, *ATIA News*, reported that their proposal had been circulated to the ATIA's divisions for discussion, and that they had met recently with Paul Elliott, the Parliamentary Secretary to the Minister for Communications, who has responsibility for spectrum management issues.

Technical Correspondence

All technical correspondence from members will be considered for publication, but should be less than 300 words.

CRADBIG Charger

The excitation circuit in the article in the December issue of *Amateur Radio* leaves a little to be desired, as the author suggests. I would like to offer a simple fix to overcome the charger's shortcomings.

The output voltage of the unit described is directly proportional to rotor speed and inversely proportional to load. The result is a need to continually adjust the excitation control. The circuit is capable of destroying the battery if the voltage is allowed to rise above 15.1 volts (2.5 volts per cell). This causes the plates to heat up thereby dislodging the positive plate material. A voltage of 2.45 per cell is generally considered to be the maximum permissible. If the voltage is higher than this figure, the active material sheds and falls to the bottom of the cell. This can result in a shorted cell or the material going into suspension, appearing as a red tinge in the electrolyte.

The simple fix is to replace the excitation circuit with a low cost Bosch RE55 regulator (\$15.40 plus tax). Connect D+ to the battery via the series diode combination, earth the case to battery negative, and connect F to the top end of the rotor winding. This regulator is only suitable for alternators with one end of the rotor connected to earth. Using this regulator the CRADBIG will regulate the output voltage between 14.0 volts and 14.4 volts. It has temperature compensation, negative feedback for stable output and internal filtering against transients.

Using the RE55 you can charge the battery without having the fear of the whole thing suddenly taking off into no man's land!

Bob Tait VK3UI

**PO Box 107
Seaford VIC 3198**

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Repeater Link

Will McGhie VK6UU*

Loops

Last month's *Repeater Link* tried to pass on some of the knowledge gained at an amateur level on the tuning of the two metre cavity filter duplexer. Not an easy task but I hope amateurs faced with the task of constructing and tuning a duplexer for the first time found some of the information useful. Much of the following will make sense to duplexer builders but to most other amateurs may be a mystery.

This month I have included additional information on the coupling loops. As commented on last month, I found the coupling loops in the ARRL design were coupled too tightly to the centre tuning element. Only by reducing the coupling could I achieve the published results. In the hope that a picture is worth a thousand words the accompanying drawing, Fig 1, should help in modifying the coupling loops. The shape is as simple as could be.

No precise bending of the wire loops into the published rectangular shape is required, just 115 mm (4.5") of household electrical wire formed into a loop. The 115 mm is the total length from the solder connection on the BNC to the earth termination. The closest point of the loop to the centre tuning element is the only critical dimension. By moving the loops in and out from the tuning element the correct degree of coupling is achieved. The 6 mm as shown is close to the right coupling but you will still require some experimentation.

Cuts

Note also the bottom of the tuning element where the centre tuning plunger extends. Instead of the finger stock as specified in the *ARRL Handbook*, which is labour intensive, simply cut eight slots in the larger tube down about 40 mm. Screw the centre smaller tube far enough inside the larger tube so you can squeeze in the eight slotted bottom pieces. Do every alternate one so you end up with four inner ones and then four outer ones overlaying the inner ones. Then screw the inner tube out to the position shown. Much easier.

History

While writing the articles on the two metre cavity duplexer, my memory returned back to those long ago days when the word duplexer first crept into the repeater scene in VK6. The first repeaters in VK6 were all split antenna designs. Coupling a repeater via a duplexer to a single antenna was a great mystery that

had far too many unknowns. Only one of the club members had any two way commercial knowledge and that was limited when it came to understanding the duplexer.

Many hours of discussion were spent on how a duplexer was put together. Most of the commercial radio systems back then used much wider frequency separation between the input and output frequencies which, in turn, meant the duplexer was easier to make and get going. Could a 500 kHz split amateur repeater for two metres be made to work through a duplexer? No, the 500 kHz is not a typo. Way back then the repeater split on two metres was 500 kHz before it changed to 600 kHz.

When the ARRL design appeared, much discussion on building a duplexer ensued. It is important to understand that amateur repeater clubs or individuals vary greatly in their knowledge. What one group, due to its radio experience, takes for granted and moves on, another group flounders over for months, or sometimes years. Finding out information in amateur radio can at times be exceedingly difficult. Even when the information is there it is usually written by someone who knows a lot about the subject. This can be an inbuilt flaw. What the writer takes as accepted knowledge causes nothing but confusion for those struggling with the

basic concepts. Sometimes information is left out, such as how the dimensions for the connecting cables in the duplexer are arrived at. Does anyone know?

In examining the ARRL duplexer design, many hours were spent trying to duplicate the design down to the last turn on the lathe. Even the tiny insulator bushings for passing the coupling loops through the top plate were reproduced in exact detail, as it was thought that any deviation from the design could result in disaster. Today a 3 mm hole is drilled and household electrical wire passed through to make up the coupling loops. The job of the insulator bushings is done by the plastic covering on the electrical wire. I sometimes think that construction projects very much reflect the individual's bias. If you are into machine turning on your big lathe then every chance you get to use the lathe results in one more piece of beautifully manufactured hardware. For those following behind it can be a major hurdle that turns out to be completely unnecessary. A simple comment like "this is the way I did it but a simple hole with insulated electrical wire is also OK" could have made the project so much easier.

I wonder if us few VK6 amateurs were the only ones way back then struggling with the mysteries of the duplexer? Dare I say, could it be happening all over again even as you read this?

News

Whenever I see an item on packet that relates to repeaters I usually read it. In order to find more input to *Repeater Link* I then send a packet back to the author of the packet item requesting any information on repeaters. It may be a new repeater just going into service or a bit of history relating to repeaters in that area. It is hard going getting amateurs to write and pass on their experiences in building, installing and maintaining repeaters.

What interests me in particular is the organisational side of putting a repeater on air. Is a given repeater the result of an individual or a group of amateurs? Coordinating a repeater installation can be an interesting experience. If you would like to have your repeater featured in *Repeater Link*, be it large or small, then send me whatever information you have. Other amateurs who are sharing similar experiences can relate to your particular situation and perhaps gain a small amount of help and enjoyment by reading about your repeater.

Cairns

From Bob VK4JZB comes the following information on a new 70 cm repeater in Cairns.

The repeater itself was put together from a Hamtronics kit many years ago and

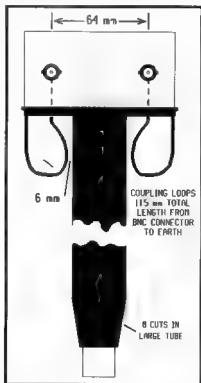


Fig 1.

tended to lay dormant until earlier this year. The antennas are both J poles spaced about one metre apart and are situated on top of the generator room of the Matsen Plaza. The generator room itself is situated above the 13th floor on the southern end of the complex. Output power is approx 12 watts and the frequency is 439.350 MHz. The input frequency is 5 MHz lower on 434.350 MHz. The Matsen Plaza is owned and operated by the Daiyko Group and until very recently had Paul VK4APN as the General Manager. Paul was instrumental in obtaining the site for the Cairns Amateur Radio and Electronics Club Inc, the repeater sponsor.

Thanks Bob for the information. Bob's Packet address is VK4JZB @ VK4KGV FNQQLD AUS.OC if you want any additional information

Adelaide

Also tracked down on packet was Mark VK5AVQ who sent me this information on some of the history about repeaters in Adelaide.

Adelaide's first repeater was VK5RAD at Crafrers on 147.000 MHz back in 1971. A 146.850 system followed in the mid seventies. In 1979 a UHF repeater committee was formed, of which I was part and, with a W15U donated by Philips, the project was on air a few years later as VK5RVP. This UHF repeater was co-sited with the two metre repeater VK5RAD. The UHF repeater runs two antennas and a masthead amplifier. Attempts to boost the 5 watts output power have been messy, as have the three serial rebuilds, two due to tower collapses, but that's another story. (I'd like to hear about that one too, Mark) Last year I went to VK0 and the UHF repeater failed. While off air, due to confusion the licence was transferred to Mt Lofty. I'm hoping to replace the old W15U UHF repeater VK5RVP with a Philips FM 815 that was obtained from the VK6 VHF Group. The proposed location is Mt Lofty which is Adelaide's highest site. Meanwhile the W15U is re-licensed as VK5RAD at Crafrers until Mt Lofty is running

When I returned from VK0 and discovered that VK5RVP was off air I investigated and found the 40 minute fail-safe timer's latching relay had tripped. There was probably a glitch when a digipeater was installed at the site. A simple fault but no one else knew the system (or cared?). Presently there are only two other 70 cm repeaters around Adelaide. Fairly quiet in Adelaide but we did have the first ATV licence and repeater in Australia

Thanks Mark for your comments on that aspect of the repeater scene in Adelaide in which you are directly involved. Mark's

packet address is VK5AVQ @ VK5WI.#ADL.#SA AUS.OC.

I particularly identified with the problem about information pertaining to a particular repeater installation being vested in only one individual. If for any reason that person is not available no one

Spotlight on SWLing

Robin L. Harwood VK7RH*

Conditions still have not improved and there has not been a great deal happening on the bands. The VOA has started a daily talkback program at 1700 UTC entitled simply "Talk to America". This 60 minute program will not be heard by many in this region due to its timing. However, they do have edited highlights in later releases. WJCR, the Kentucky gospel music station on 7490 kHz, was off-air for a while due to difficulties in obtaining tubes. This information followed my query on Internet to its continued absence.

The nearby WWCN station in Nashville, Tennessee continues mainly to broadcast religious programming, yet I have heard it signing as "World Wide Country Radio" between 2100 and 2300 hours on 11980 kHz. The program consists of Country and Western music plus commercials. This isn't surprising as Nashville is regarded as the home of this genre of music. WWCN utilises three transmitters, one of which is dedicated to the so-called "University Network" and Dr Gene Scott 5935 kHz seems to be the channel carrying this program while 5065 and 7435 carry separate programming around 0700 UTC.

I was puzzled by a station on 9255 kHz at 0630 UTC on 5 December last, broadcasting in Persian. Identification was difficult due to lumpy modulation and generator hum. Programming was mainly martial music plus plenty of slogans. Iran and one of its leaders (Rafsanjani) was frequently mentioned. It was not Teheran as I cross-checked 15084 kHz so it presumably is one of the clandestine outlets in the Mid-east. The station is not a regular but could be beneath the bubble jammers that are heard between 0500 and 0700 UTC daily sweeping from 9200 to 9350 kHz

It looks as if the days of longwave broadcasting are numbered, particularly in Western Europe. Norway and Austria ceased using these frequencies on 1 January. Others are likely eventually to follow suit. Incidentally, Austria went further and left AM, relying on the FM networks. The CIS countries (ie the former Soviet Union and Eastern Europe) will

else has any idea what to do. How is information about your local repeater documented and how many people know anything about its operation?

*21 Waterloo Crescent, Lassmurdie 8076
VK6UU @ VK6BS

probably continue on LW for longer than in Western Europe.

Don't forget early next month, the Daylight Saving madness will be really evident. NSW leaves it on the first Sunday of the month, whilst New Zealand follows suit on the second Sunday. Victoria and South Australia will join Tasmania and revert to Standard time on the 26th. Honestly, I don't know why we are unable to standardise the changeover dates. Apparently time comes under state jurisdiction and not Commonwealth. Just to demonstrate how ludicrous it will be, Broken Hill (which is on Adelaide time) will be 30 minutes ahead of Sydney when it usually is the other way round

Budgetary cutbacks are continuing in the major public broadcasters. The latest to feel this is Kol Israel in Jerusalem who axed several English releases. The CBC in Canada recently announced it was axing 6,000 of its staff which includes the shortwave arm, Radio Canada International. Ironically, the RCI site at Sackville, New Brunswick is mainly used by other broadcasters to get into North America. The users are the BBC, Radio Japan, Radio Korea, Austrian Radio and Deutsche Welle.

This increasing trend for site sharing makes it a challenge to identify what country the signal is emanating from. I wonder just how many have been caught hearing Radio Japan in Tokyo at 0700 UTC on 7230 kHz when, in fact, the signals are coming from Skelton in the UK. Fortunately, Radio Japan acknowledges this fact but there are many who fail to disclose it. China Radio International in Beijing is heard around 0400 UTC in English on the 25 metre band yet in reality it is via French Guiana

Well that is all for February. Don't forget if you have any news for inclusion, I can be reached on Internet or FidoNet as below. The Packet address is unchanged as is my snail mail address, despite what the latest callbook states. Until March, the very best of listening and 73.

*52 Cornnough Crescent, West Linton TAS 7250
VK7RH @ VK7BS LTN TAS AUS.OC
Internet: robby @ cine.apara.org.au
FidoNet: Robin Harwood 3.670/301@fidonet.org

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VHF/UHF — An Expanding World

Eric Jamieson VK5LP*

All times are UTC.

World Record 10 GHz Contact

What is likely to be confirmed as a world record contact on 10.368100 GHz on 30/12/1994 at 1232 UTC took place between Roger VK5NY/p at Mount Wilson PF94hs, 408 metres ASL and south of Adelaide, South Australia, and Wally VK6KZ/p at Torbay Hill OF84tw near West Cape Howe, 140 metres ASL and 25 km west of Albany, Western Australia, over a distance of 1911.9 km. Both stations used SSB, VK6KZ/p gave a 4x1 report to VK5NY/p and the reverse report was 5x2. Roger and Wally noted strong QSB over the mainly water path across the Great Australian Bight. The contact also establishes VK5, VK6 and Australian records.

VK5NY/p used a German designed transverter with an output of 180 mW into a 40 cm dish with penny feed and an FT290R for the 144 MHz IF. VK6KZ/p used a Sucking English designed transverter with 100 mW output into a 40 cm dish with dipole feed, a 4 dB NF receiver and an FT290R for the 144 MHz IF.

Both stations ran keyers and signals were copied for about three hours. A contact followed at 1457 UTC with numbers exchanged for the Ross Hull Memorial Contest, 4x1 reports both ways on SSB with serial numbers exchanged. Both operators are to be congratulated for their efforts in placing Australia on the map again while we wait for the US amateurs to work Hawaii from San Francisco and so clinch the record!

Another station in Adelaide, David VK5KK PF94 was endeavouring to make contact with VK6KZ/p at the same time as the first contact. Signals were marginal and both David and Wally could hear each others' signals but no two-way contact took place. David is believed to be about 6 km further distant from Wally than Roger, who now awaits to see who will take the record from him!

The present World Record for 10 GHz occurred on 18/7/1993 between EA9/0SNY and 10YL1/IE9 at a distance of 1866 km.



The map indicates the progression of 10 GHz contacts in Australia during 1993/4. On 30/4/93 VK5NY/p QF02ec Cape Banks Light House to VK3ACY/p PF84rg Minarapa, Kangaroo Island, 355.4 km and a new national record; 22/4/94: VK5NY/p PF94hs Mount Wilson to VK5MC QF02 Nilfent 290 km; 12/12: VK5NY/p PF94hs Mt Magnificent to VK5NC/p QF02jd at Potters Point, Mt Gambier, 338 km; then to VK5NC/p QF01mw Nelson, Victoria 369 km; then VK3ZQB/p QF11dp near Port Fairy 466 km; 14/12: VK6BHT/p OG71 near Geraldton to VK6KZ/p OF76 at Busselton 40 km south of Bunbury 545 km; 30/12: VK5NY/p PF94hs Mount Wilson near McLaren Vale to VK6KZ/p OF84tw Torbay Hill west of Albany 1911.9 km. Also shown is the location of VK2ALU QF55 who recently set a 10 GHz EME world record and has been a pioneer of 10 GHz terrestrial experiments.

Notable 10 GHz Contacts

Wally VK6KZ said by fax that on 29/11/94 at 1352 Neil VK6BHT/p OG71 at Point Moore near Geraldton worked VK6KZ/p OF77 at Rockingham near Perth on 10368.080 MHz SSB signal reports were 5x5 each way. The distance between the stations was 402 km and exceeded the current Western Australian and Australian records.

This contact followed one about an hour earlier when VK6KZ/p was portable at the North Mole OF77 at Fremantle Harbour over a 377 km path. This earlier contact was notable in that it represented the first two-way narrow band contact for both operators.

On 14/12 with the two metre path open between Geraldton and Perth, a decision was made for VK6KZ to go portable and VK6BHT to travel to Point Moore again. Contacts were made from Rockingham (402 km), Falcon OF77 (434 km), and Bunbury OF76 (515 km). As signals were 5-78 both ways from Bunbury and it was only 2315 local time, a decision was made for VK6KZ to go further south to Busselton OF76 to provide an all-water path to Geraldton OG71. The two stations were in QSO between 1805 and 1832 UTC (0032 local) with signals peaking 5x5 both ways. QSB was very evident on the path at this time. This contact over the 545 km path is being claimed as a new WA and Australian 10 GHz distance record.

The equipment used was based on the G3WDG design. Neil VK6BHT has 70 milliwatts to a 570 mm dish and a judged 3 dB NF receiver with an Icom IC202 and Wally VK6KZ has 100 milliwatts to a 400 mm dish with a 4 dB NF receiver to a Yaesu FT290R.

Contacts have been made on three occasions, two of which have been from VK6BHT/p in Geraldton to the home QTH of VK6KZ OF78 in Perth. Neil is optimistic that, with his gear mounted on the roof of his home, direct contacts will be possible. It all sounds very interesting and we await the next episode.

As it turned out, the next episode was almost on the heels of the above contact and is one which should set the microwave fraternity agog with interest. The details are in the box at the left of this page.

Big Mates

The sporadic-E appears to have favoured long distance contacts this year. ZLs have been working across to VK6 Perth which is a long way, as are the contacts between the northern VK4s and ZLs, also VK6 to VK4 which are not that common. On 7/11 stations were copied here from VK, ZL, P29 and a single JA at 0636. 12/11: ZLs and at 0925 on 40.000 MHz there were telephone signals at 90

degrees. The next four weeks produced the usual VK2s, VK4s and many VK6s and ZLs. On 26/12 at 2350 I was able to hear both sides of a contact between VK6AKT and ZL2KT and ZL3TLG ZL3s again on 29/12. Two metre ES contacts appear to have been scarce.

Two metre tropo contacts have been reasonably consistent between VK5 and VK3 and VK7. The VK7RNW beacon at Lonah is a good indicator of conditions as is VK3RGL at Geelong both of which are regulars at VK5LP. The VK3RMV beacon near Hamilton is usually S1 most days from the rear of its antenna although on 29/12 at 1000 it was S5. We still miss the VK5RSE beacon at Mount Gambier and the Melbourne beacon remains a mystery as to why it cannot be heard in VK5.

On 21/11 Norm VK3DUT reported JAs from 0530 and worked JR2HCB, JE2DWZ, JH1WHS with most QSB. 7/11: VK5BC, VK3OT, VK4ZAL, VK2YDC, VK6AS. At 0650 heard P29PL and P29ZFS working VK8GF. At 0810 ZL3s, then at 1250 worked VK5ZEE and VK5ZBK. Reasonable opening on 13/11 between 0230 and 0340 with VK4ZBV, VK4AMJ, VK4LE, VK4NW, VK2GJC, VK2BMX, VK4KHG. At 0800 to ZL4TBN, ZL3TIC, ZL4LH, ZL3ADT, ZL3NW and ZL2AQR until 1145. Thanks to VK3OT for the above information.

It is with regret that I announce the passing of Keith Laws VK2BKL on 23/10/94. Keith was an ardent six metre operator and will be missed. He came on the air on 2/12/1958 as VK2ZVL. It appears from my log book that I worked him for the first time on 8/1/65.

Jordan to USA

In the December 1994 issue of *Amateur Radio* I mentioned the 10,000 km contact between Jordan and the US and was seeking more details. They were already in the October issue of *Six News* but I missed them.

The station worked was WD4KPD and the contact took place at 2145 on 9 June 1994. After a long day, Geoff G4JICD and Nick G3ROX were laying on their beds, shattered. The CQ keyer was calling every 30 seconds on 50.110 but the band was silent. Suddenly, a weak CW station broke through the noise and was quickly identified as WD4KPD, but the completion of the QSO took about ten minutes due to deep QSB. Nick then phoned W4OO who alerted US operators but no other US stations were heard during the whole trip. A few minutes after the contact PA and ON were worked before the band finally closed for the evening.

From the American side it is understood that 6 m was open to CU and 48.250/48.242 MHz video was audible in many eastern states. WD4KPD is in

FM15mm, a distance of 9775 km from Amman! He runs a Yaesu FT276R, TESystems amplifier with 140 watts output to a 7 element beam 25 feet high and surrounded by trees. There can be no suggestion of trans-equatorial propagation link-up due to the east-west path, so it looks like at least four hop sporadic-E. This contact was both unexpected and amazing! So now you have the details.

Neil G0JHC in his letter said: *I think it is very important with multi-hop Es for at least one of the stations to be very high above sea level. If you look at the best contacts made each summer from Europe, most of them are from FB locations. In Amman, Jordan we were 3000 feet ASL and the antenna a further 200 feet AGL with a clear take-off to the horizon. If we all lived in places like that I'm sure there would be many more reported QSOs around 10,000 km. Hi!*

In the light of the above comment there is little hope for VK5LP being the better end of a contact. My house sits about two metres ASL despite being 15 km from the coast, and the antenna is 20 metres high!

EME Contest

Al Rechner VK5EK participated in the ARRL EME Contest in October and November 1994 in the two metres section. Al is running 8x10 element Yagis each 4.6 metres long, in two horizontal rows of 4 spaced 3.7 metres vertically and 2.7 metres horizontally. Each array should give a gain of 12 dB and the whole array about 20 dB. The Yagi design is from the ARRL VHF Handbook and fed with open wire line.

Al's VXO frequency controlled transmitter uses a pair of 4-125As driven by a QEO6/40. He uses a BF961 pre-amplifier in front of a valve converter (E88CC cascade/6AK5 mixer) to a TS850 with about 200 Hz bandpass.

He said: *The contest occupied the weekends of 29/30 October and 26/27 November and on both days of the second weekend the 150 foot radio telescope at Algonquin in Canada was in use with the callsign VE3ONT. On the first weekend Al worked K5GW, I2FAK, HB9CRQ, W5UN and KB8RQ. All stations were in the lowest 20 kHz of the two metre band. The legendary W5UN who runs 48 Yagis was much weaker than expected. On the second weekend Al worked SM5FRH and KB8RQ, plus VE3ONT, K5GW and I2FAK each twice.*

The European stations were worked just before moonset, about mid-day local time both weekends. The USA was worked just after moonrise, about 3 am local time both weekends. Clear skies allowed the antenna to be aimed visually on most

occasions with strong signals. When the sky was overcast Al relied on computer antenna directional calibrations.

Another EME participant was Chris VK5MC who operated on 432 and 1296 MHz 29/10: on 432 Chris worked SM4IVE 559/559, JA4BLC 449/449; on 1296 EA6/DF5JJ M/O, OZ4MM 449/559, LA8LF O/O, AA6W1 O/O, WB5LUA 449/449, 30/10: 432 DL9KR 559/559, 15MPH 569/559, F1FEN O/559, OH2PO 559/559 1296: F1ANH 439/439.

26/11 432 OE5JFL 559/559, DL3BGG O/O, N4GJV O/O, VK3UM 549/449; 1296 AA6W1 539/539, N21QU O/O. 27/11: 432 G4RGK O/O, K1FO 549/559, 1296 OE5JFL O/O, ZS6AXT O/O, OE9XXI 549/559, HB9BBD O/O, K2UYH 559/549.

The stations were contacted using a 6 metre dish with dual mode feedhorn on 1296 which has a pair of dipoles for vertical and horizontal operation on 432 MHz mounted around the 1296 MHz feed. Chris said it was interesting to see the difference the polarisation switch had on signals, sometimes the signals disappeared completely. Despite the late (or early) hours he enjoyed the contest.

Doug VK3UM was another participant in the EME contests, although an equipment blow-up on the first weekend made it difficult with a power reduction to 50 watts! All contacts were on 432 MHz. 29/10: 0000 to 0213 — DL9KR, JA9BOH, JA4BLC, DL9NDD, JA5OVU, F1FEN, OE5JFL; 1635 to 1756 — K1FO, N4GJV, W7FN, K0RZ, N21QU, VE1ZJ, W0KJY, K1ROG, NC11, WA8BJE, KB8ZW, K2OS.

26/11. 0000 to 0045 — DJ8MB, SM4IVE, OH2PO, OK1CA, DF6NA, UR4LL, G3SEK; 1524 to 2350 — W0RAP, K4QIF, WA4NJ, W2UHI, N4PZ, WA7BBM, K3LFO, W7HAH, W8TN, VK5MC, JA4BLC, UR4LX, UA6LGH, UT5EC, S57QM.

27/11 0004 to 0145 — UT4DL, S51ZO, I2COR, ON4NGK, ON4OF, G4RGK, F5M2N, SP5CJJ; 1545 to 1823 — KD4LT, W8ZVJV, VE1ALQ, JA7UIQ, KB4HH, JA2JRV, WA8BJE. Doug had a pleasing total of 56 contacts with 29 multipliers.

Antarctica

Darin VK0IX (VK5IX) is at the Casey Base for about 12 months. He has a six metre beacon VK0IX on 50.200 but it seems delays with the off-loading of the six metre antenna and/or equipment may have prevented early December operating which probably would have provided the best conditions for a contact to Australia. Darin's QSL Manager is VK5PO. All that anyone can do is call and listen and hope that there is someone at the VK0 end if your signals reach that far.

I mentioned last month that Mike K6MYC would be on the Antarctic

continent from 16/12 to late January hoping to work 6 and 2 metres EME. A message from Steve VK3OT said that up to 25/12 they had made two EME contacts on 144 MHz but so far nothing had eventuated on six metres. A late message says that Mike has worked a further six stations in the US. On 3/1/95 at 0645 VK3ATQ reported that he heard Mike's six metre beacon on 50.0099 MHz. Mike's output power is a maximum of 600 watts.

Apart from EME usage, there seems no reason why Antarctica should not be worked via Es as the distance from Melbourne is not much greater than from Perth to New Zealand and contacts have been made to there on a number of occasions including this December

Canberra signals

Ron VK3AFW sent a Fax to say that on 4/12 he had worked Ian VK1BG via aircraft enhancement on 144.2 and 432.2. Ian informed Ron that for several years he had been trying to work Ross VK2DVZ at Taree on 1296 MHz and had succeeded that morning. At 2030 he heard Ross's 1296 MHz beacon at S7 and for some time tried to contact Ross using telephone and two metres.

After half an hour Ross appeared on two metres at 5x9 plus and worked Ian and Eddie VK1VP. They did the same on 432 where signals were also 5x9. Another QSY to 1296 brought Q5 and easy QSOs for both Ian and Eddie. The distance is about 480 km. Doug VK3UM heard Ross on 432 and Ross heard Doug but, despite their best efforts, no complete QSO resulted. Their distance is about 920 km and crosses the lower part of the Great Divide as well.

These happenings occurred as a result of a large tropo duct stretching along the entire coast of NSW and penetrating about 100 km inland, resulting in considerable congestion on 144 200.

A further set of good conditions on the morning of 18/12 resulted in Eddie VK1VP working Ross VK2DVZ on 1296, to be followed shortly after by Ian VK1BG doing the same. Contacts ensued on 1296, 432 and 144 MHz with 1296 providing stronger signals than 432. Ross also copied the VK1 1296 beacon which runs about 1.5 watts to a crossed dipole.

Ron also advised that on 16/12 Charlie VK3BRZ in Lara and VK3FPG in Melbourne worked VK6APZ and VK6ATS at Esperance on 144 MHz. The latter station was running 25 watts to a two element quad. Charlie also worked VK6APZ on 432 MHz. On the morning of 17/12 David VK3AUU worked VK6AS at Esperance. These represent contacts over a considerable distance.

News from Europe

Ted Collins G4UPS said conditions were generally poor during November and often contacts are limited to his regular skeds with SM7AED and G3CCH. Of interest to us, on 8 November at 0825 he copied the VK5WI beacon on 28 MHz at 559 during rain conditions.

For November contacts were made with, or signals were heard from, 2E1DC, 4N1SIX/b, G0GKC, G3HBR, G3OMH, G4SZM, G5JJ, G8WZA, G83HU/b, GB3LER/b, GB3MCR/b, GB3NHQ/b, GB3RMK/b, I2WSG, IK1EGC, OH1SIX/b, OZ2LD, OZ5IO, OZ6VHF/b, OZ7DX, OZ7IGY/b. The list includes several beacons and, after taking out six G stations, the pickings have been poor, something akin to our six metre conditions in May.

Courtesy of Roger Harrison VK2ZRH comes a list of beacons in the IARU Region 1 area and includes 46 beacons on 50 MHz, 9 on 70 MHz, 74 on 144, 78 on 432, 85 on 1296, 37 on 2320, 6 on 3456, 6 on 5760, 42 on 10 GHz and 11 on 24 GHz. The beacons appear to be widely scattered through Europe, nearby islands and Africa so no matter where you live there exists the possibility of having a beacon within range of your receiver!

Silent Keys

Due to space demands obituaries should be no longer than 200 words.

The WIA regrets to announce the recent passing of:-

J E	THOMPSON	VK2AHT
M L T (Jim)	RUDDER	VK2DCF
E	MEYERINK	VK2PUM
J A	CORDINGLEY	VK3DCK
R D	TAYLOR	VK6ABD
J K	BARTHOLOMEW	VK4YJB
H E	VIVIAN	VK5FO
W R	FRANZI	VK5FR
W (Bill)	RUSSELL	VK5WR
D C	LEDGARD	VK5ZLE

Jim Rudder VK2DCF

Jim Rudder passed away, in Sydney's Westmead Hospital, during the early hours of 22 December 1994, some four months after the onset of a vaguely defined illness, at first thought to be a heart attack. He was 78 years of age.

Jim, returning to "convry" life after war service in Signals, became an active member of the original Gladesville and District Experimental Radio Club in Sydney and obtained his original call of VK2AJR in 1946.

After some years, a competing interest in archery, in which he and his wife Dawn

The Calling frequency

For a long time I have been exhorting amateurs to remember that 50.110 MHz is the international DX calling frequency.

It gives me a degree of pleasure to say that my observations on six metres this summer Es season indicate that, almost without exception, after initiating a contact on 50.110 amateurs are moving to other frequencies. This is good and you are to be applauded. Please keep it going. For some reason, about the only exceptions now are a few CW operators who still persist in holding QSOs there, sometimes multiple QSOs. Why? I thought all transceivers had tuning mechanisms!

Closure

I hope the sporadic-E season was good to you and that you were able to join in the fun of the Field Day contacts.

Closing with two thoughts for the month:

- 1 The chief drawback to New Year's resolutions is that a wife always remembers her husband's, and
- 2 Mincing your words makes it easier if you have to eat them later.

73 from The Voice by the Lake

*PO Box 169, Meningie SA 5284
FAX to 085 751 043. Packet to VK5ZK for VK5LP

were enthusiastic participants, and in quality cars (initially the Armstrong Siddeley, then the Triumph and latterly, as befitted increasing maturity, the Volvo) caused him to turn temporarily from amateur radio and allow his original call to lapse.

A serious motor accident, which left him with some physical handicaps reducing his mobility, no doubt contributed to his return to amateur radio and he again took out a call sign, VK2DCF, which he held until his death.

A few years after the war Jim joined the (former) PMG's Department as a temporary technician, progressing to permanency, achievement of Senior Technician's qualifications, and ultimately switching to the Department's Training organisation where, for many years, he actively participated in the training of future technicians, until his retirement.

Jim's wife, Dawn, passed away some seven years ago, but he is survived by his four children, Patricia, Tony, Christopher and Mark, and we extend our deepest sympathy to them and their families.

Ken Andrew VK2ATK

Ken Millin VK7KA

On Saturday, 26 November 1994, at 7.30 pm in the Repat hospital, Ken Millin VK7KA passed away peacefully. Ken made a long-time impact on amateur radio, as his name on the officials' board on the wall in the clubroom at the Domain will testify, secretary from 1957 to 1962.

He was a member of the radio amateurs old-timers' club and an avid CW operator. But it was not only in amateur radio that he made his mark. Ken was a skilled motor mechanic, having trained at Hobart Tech, and worked for some time for Shell. He was born in the UK, in Maidenhead, and came out to Australia as a child. Before the war, Ken joined the Naval Reserve and, when war broke out, he went into the Royal Australian Navy, spending some time on the minesweeper HMAS Warrungul. He also worked as an ERA on small boats in Darwin.

Post war, the family business was the Moonah Automotive Repair Shop where Ken, of course, used his skills. He also worked equipment for the Mines Department, and on drilling.

Sailing was another of his hobbies, and he built and raced a Tamar dinghy with his daughters June and Mary. Then the 34-foot yacht "Melita", a Piet Hein design he raced with Belleve Yacht Club and finally there was "Runaway" which, with his son Norman, he took into the Sydney/Hobart, and finished!

Before we get to the amateur radio side, we must mention that Ken also learned to fly and, post war, went solo!

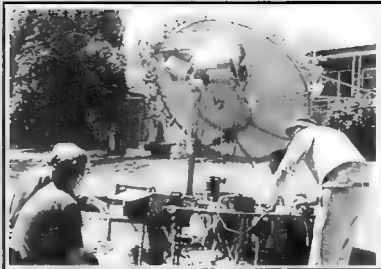
Ken's radio exploits included building an AM transmitter in a cabinet which was also expertly built, 6 feet high and 19 inches wide, for 10 to 80 metres and, to top it all off, he constructed a beautifully designed paddle for an electronic keyer. In 1958/9, in the international sphere, Ken came third in the Australia/New Zealand DX contest and compiled a score of 10,764 points in the American Worldwide CW contest. Quite a deal of progress from the first two watt CW transmitter he built when licensed in 1948, when his first contact was Ted VK7GB.

A full page about Ken appeared in "The Tasmanian Mason" in June 1993 and that brings to light yet another facet of this very talented person who will be very much missed. Our sympathy goes to all his family from his many colleagues in the amateur radio service.

Attending Ken's funeral were amateur operators VK7LE, 7FE, 7EB, 7LS, 7AL, 7FM, 7RX, 7RO, 7GB, 7KS and 7CH.

John Rogers VK7JK

QSP News



VK2ALU's New 10 GHz World Record

Details of the new world record on 10 GHz appeared on pages 39 and 49 of last month's *Amateur Radio* magazine. No photographs were taken during the test, but the above picture was taken from a frame of a video taken by Les Holmes.

Lyle VK2ALU is leaning over and keying the transmitter. John VK2XGJ is on Lyle's left, calling out dish azimuth and elevation readings to David VK2YKQ (beneath the dish) who kept the dish pointed at the moon for the test.

Robert VK2SRB (hidden behind VK2XGJ) is monitoring the transmit frequency on an 18 GHz frequency counter (borrowed for the day — not now available) so that the transmit frequency of 10,368.100 MHz could be accurately maintained by adjustment of the transmitter IF injection frequency at 144 MHz from an FT290R.

NZART Morse Code Policy

As the result of a survey conducted in 1993, to which 31% of their members responded, the NZART, the WIA's sister society in New Zealand, has established the

following policy in regard to Morse code.

The policy is:

1. That NZART support the continuation of Morse Code as an entry test for full amateur radio privileges.
2. That NZART support the retention of the current standards of 12 wpm for full privileges and 6 wpm for Novice.
3. That NZART seek a relaxed Morse Code examination environment that will encourage candidates and realistically test their ability.
4. That NZART oppose any move to isolate our licence from the standards set out in the ITU Radio Regulations and accepted for CEPT and reciprocity.
5. That until a change is made in the ITU International Radio Regulations, NZART request that the Ministry of Commerce retain the Morse Code requirement (the Ministry of Commerce is the New Zealand Administration).
6. That should moves be made by the IARU to delete Morse Code as an entry point under the ITU Radio Regulations, NZART seriously consider supporting such action.

Stephen P Smith VK2SPS*



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The WIA is working towards a positive resolution in 1995.

No Pressure on 2 m and 70 cm Bands for 2000 Olympics

At a meeting on 5 December last year, the Spectrum Management Agency (SMA) gave assurances to the WIA that the Sydney Organising Committee for the Olympic Games was not planning to apply for temporary use of all or part of the 144-148 MHz and 420-450 MHz amateur bands.

Executive manager of the SMA's Customer Services Group, Peter Stackpole (VK1RX) told the WIA that, after recent discussions with the Sydney Organising Committee, there was no hint of any impact on amateur bands. The Sydney Organising Committee had little requirement for spectrum space, he said, and what they were planning was covered by existing allocations. The WIA raised the issue with the SMA as there had been persistent rumours circulating that the 2 m and 70 cm bands might be required for the Olympics, even if on a temporary basis. French amateurs lost the use of their 144-148 MHz band during the Winter Olympics held there several years ago.

The WIA has arranged with the SMA that, in future, where amateur bands are affected by any proposals for use of spectrum, the WIA will be consulted at the time.

An Australian Amateur Band on VLF?

The WIA is progressing with negotiations with the Spectrum Management Agency (SMA) for an allocation in the 160 to 190 kHz region for Australian radio amateurs. Secondary use for amateurs is being sought for this band, which is presently used by radio navigation services.

The SMA told the WIA at a meeting on 5 December last year that they had written to the Civil Aviation Authority (CAA) who have responsibility for primary services

operating in this band, seeking their comments on the WIA's proposal. The CAA is yet to reply.

New Zealand amateurs are permitted to use the band 165-190 kHz, also known as 1800 metres, with a power limit of 5 W effective radiated power. A few Australian amateurs have taken out experimental licences with the SMA and are conducting transmission and propagation experiments with homebrew equipment.

The WIA will continue negotiations with the SMA in an effort to obtain access to the 1800 metre band for Australian amateurs.

LEO Satellites Boom

Low Earth Orbiting satellites (LEOs) will figure in global communications networks by the year 2000, according to an American academic.

Addressing the 1994 Australian Telecommunications Networks and Applications Conference held in Melbourne in the first week of December, Professor Bezalel Gavish of the Vanderbilt University in America, said that LEO systems would enable telecommunications providers to target any region in the world as a market.

Several telecommunications systems employing LEO satellite technology were in the planning stages, he said, and are expected to be operational by the turn of the century. The Iridium and Globalstar systems are among them.

Radio amateurs pioneered LEO satellite technology with the OSCAR series of satellites launched over the past three decades, joined in recent years by the British UoSATs, Russian RS-series, Korean and Japanese amateur satellites.

Orbiting at heights between 700 and 1500 km above the Earth, Professor Garvish says the LEO telecommunications systems had

the potential to cause problems as they would enable network users to bypass local regulatory authorities.

Such LEO systems would cost some \$AUS 5-13 billion to establish, Professor Garvish predicted.

New WIA Members

The WIA bids a warm welcome to the following new members who were entered into the WIA Membership Register during the month of December 1994:

L20985	MR C M BRAMLEY
L20987	MR D W BUTLER
L20989	MR T G MACARTNEY
L50330	MR T DULNOAN
L60336	MR J BOUHLAS
L60339	MR P G DEAN
L70127	MR R J HANCOCK
VK2DEB	MR H SANDER
VK2GVV	MR A W MCKAY
VK2NPH	MR P G HANNA
VK2SEX	MR J PETRUSINSKI
VK2SHA	MR S L MARGERY
VK2SIL	MR N L DA SILVA
VK2TRL	MR R J LYNCH
VK2VDS	MR R DAVIS
VK2VLI	MR M G WOJTYNSKI
VK2ZJB	MR J D BRITTON
VK3VWH	MR J B HARVEY
VK4BEL	MR B E LEECH
VK4CCV	MR P G MOSCATT
VK4JWG	MR J W GILLESPIE
VK4MAA	MR K J CARTER
VK4NCH	MR K I FIRTH
VK4PFV	MR P F VICARS
VK5CI	MR P E ALLEN
VK5EDM	MR E MERTENS
VK5KDT	MR D R MADISON
VK5VE	MR W N THOMAS
VK6JRD	MR R A DE VRIES
VK6KMJ	MR M H JACKSON
VK6QC	PARAQUAD CENTRE
VK6ZW	MR T J JONES

Sign up a new member today — we need the numbers to protect our frequencies and privileges.

HF PREDICTIONS

Evan Jarman VK3ANI

The Tables Explained

The tables provide estimates of signal strength for each hour of the UTC day for five of the bands between 7 and 28 MHz. The UTC hour is the first column, the second column lists the predicted MUF (maximum useable frequency); the third column the signal strength in dB relative to 1 μ V (dB μ) at the MUF; the fourth column lists the "frequency of optimum travel" (FOT), or the optimum working frequency as it is more generally known.

The signal strengths are all shown in dB relative to a reference of 1 μ V in 50 Ohms at the receiver antenna input. The table below relates these figures to the amateur S-point "standard" where S9 is 50 μ V at the receiver's input and the S-meter scale is 6 dB per S-point.

V in 50 ohms	S-points	dB(μ V)
5000	S9	34
2500	S8	28
1250	S7	22
6.25	S6	16
3.12	S5	10
1.56	S4	4

0.78	S3	2
0.39	S2	-8
0.20	S1	-14

The tables are generated by the GRAPH-DX program from FT Promotions, assuming 100 W transmitter power output, modest beam antennas (eg three element Yagi or cubical quad) and a short-term forecast of the sunspot number. Actual solar and geomagnetic activity will affect results observed.

The three regions cover stations within the following areas:

VK EAST The major part of NSW and Queensland.

VK SOUTH Southern-NSW, VK5, VK6 and VK7.

VK WEST The south-west of Western Australia.

Likewise, the overseas terminals cover substantial regions (eg "Europe" covers most of Western Europe and the UK).

The sunspot number used in these calculations is 21.0. The predicted value for March is 20.1

VK SOUTH — SOUTH PACIFIC

UTC	MUF	dB μ	FOT	7.1	14.2	18.1	21.2	24.9
1	17.0	16	13.6	7	20	13	4	10
2	17.3	16	14.2	-6	21	14	5	-9
3	17.3	16	14.2	-3	21	14	5	-9
4	17.3	17	14.2	2	23	16	6	-8
5	17.3	18	14.1	9	25	16	6	-9
6	17.1	20	13.9	21	27	17	6	10
7	18.6	23	13.5	36	30	18	5	12
8	15.8	26	12.9	45	31	18	5	-18
9	14.6	27	11.7	47	28	11	5	28
10	13.4	28	10.7	49	25	5	13	39
11	12.5	29	10.0	48	17	7	23	1
12	11.2	30	9.4	48	14	-12	38	1
13	11.2	31	8.9	47	14	-12	38	1
14	10.7	31	8.4	46	11	-17	40	1
15	10.2	32	7.7	45	7	-23	43	1
16	9.7	33	7.4	45	4	29	7	1
17	9.3	33	7.1	43	0	35	7	1
18	9.0	33	6.8	42	3	31	7	1
19	9.3	24	7.0	28	0	31	7	1
20	10.9	19	8.1	16	8	-14	36	1
21	13.2	17	9.9	8	15	0	15	38
22	15.1	17	11.6	1	18	8	3	-21
23	16.2	16	12.7	-3	20	11	1	-14
24	16.7	15	13.3	-6	20	13	3	-12

VK WEST — SOUTH PACIFIC

UTC	MUF	dB μ	FOT	7.1	14.2	18.1	21.2	24.9
1	20.4	13	16.2	38	15	15	11	3
2	20.7	12	16.8	-39	15	16	12	6
3	21.3	15	15.1	37	16	16	12	6
4	21.1	13	17.3	-33	17	17	13	5
5	21.1	14	17.3	24	19	19	14	8
6	21.1	15	17.2	11	23	27	17	8
7	20.8	17	16.9	7	28	33	17	8
8	20.1	20	15.2	26	32	35	17	8
9	18.7	23	15.0	41	35	25	15	1
10	17.2	25	13.8	54	7	7	10	6
11	15.8	26	12.6	47	32	19	5	12
12	14.9	28	11.9	49	30	15	1	-18
13	14.2	28	11.2	48	28	12	3	24
14	13.3	29	10.7	47	26	9	3	31
15	12.9	30	10.1	47	24	6	-11	36
16	12.4	30	9.6	47	22	3	-16	41
17	11.6	32	8.8	46	20	0	-20	46
18	11.4	32	8.4	46	17	5	-26	51
19	10.9	28	8.2	31	13	-7	-26	58
20	11.4	21	8.5	17	13	-4	-22	63
21	13.4	17	10.5	1	13	4	-8	68
22	16.3	14	12.2	-15	16	11	1	-14
23	18.6	14	14.2	-26	17	14	8	-2
24	19.9	13	15.5	-34	16	15	11	2

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VK EAST — AFRICA

UTC	MUF	dB μ	FOT	7.1	14.2	18.1	21.2	24.9
1	12.9	9	8.4	17	7	-2	-14	-33
2	11.4	9	8.7	30	5	-2	-14	-31
3	11.2	1	8.5	1	2	-4	-14	-30
4	11.0	1	8.3	1	1	-5	-17	-29
5	10.8	1	8.1	1	1	5	3	-4
6	10.5	5	13.0	0	0	5	3	-3
7	10.8	5	13.1	0	0	5	3	-3
8	10.8	6	13.0	2	6	7	3	-3
9	10.8	7	13.1	5	7	3	3	-4
10	10.6	8	13.0	7	7	6	1	-8
11	10.2	9	12.2	-35	8	6	-1	13
12	14.0	11	11.2	-19	11	4	-5	-30
13	13.1	14	10.4	-4	13	3	-8	-28
14	12.5	19	9.9	12	15	1	-12	-33
15	11.9	24	8.4	27	16	0	-17	-37
16	11.4	26	8.9	34	16	-3	-22	-40
17	10.9	28	8.4	38	14	-6	-27	-43
18	10.4	30	7.9	40	13	-10	-32	-46
19	10.1	30	7.5	40	11	-13	-36	-49
20	10.0	30	7.4	41	14	-8	-30	-44
21	10.3	27	7.1	33	11	-11	-33	-41
22	9.9	25	6.9	20	7	-14	-36	-38
23	9.8	15	6.8	7	5	-13	-33	-35
24	10.5	10	7.3	-5	8	-9	-25	-30

VK SOUTH — AFRICA

UTC	MUF	dB μ	FOT	7.1	14.2	18.1	21.2	24.9
1	12.0	14	8.9	5	11	0	12	31
2	12.0	10	9.0	-14	9	0	12	-31
3	14.5	9	11.4	32	9	5	2	-15
4	14.0	10	13.4	9	10	8	-1	-1
5	15.5	8	13.8	6	9	7	0	0
6	16.8	8	14.0	5	8	6	0	0
7	18.6	8	13.9	4	8	6	0	0
8	19.4	8	13.6	3	8	6	0	0
9	19.1	8	13.5	6	9	6	1	1
10	18.3	10	12.9	9	10	5	3	3
11	17.1	11	12.0	36	11	9	4	-6
12	15.7	12	11.0	21	13	8	0	12
13	14.3	14	10.0	-6	15	6	4	-9
14	13.3	18	9.2	-10	16	4	9	-26
15	12.5	23	8.7	27	18	2	14	-36
16	11.8	26	8.2	34	17	1	19	-46
17	11.2	28	7.8	38	15	5	25	-55
18	10.8	29	7.5	40	14	-9	30	-64
19	10.5	30	7.4	40	12	11	33	-73
20	10.7	30	7.5	41	13	9	31	-72
21	11.0	29	7.8	41	15	7	27	-71
22	10.6	25	7.4	30	11	9	30	-70
23	10.6	20	7.4	18	9	8	28	-72
24	11.3	16	8.0	7	10	-5	21	-75

VK WEST — AFRICA

UTC	MUF	dB μ	FOT	7.1	14.2	18.1	21.2	24.9
1	21.3	14	18.6	1	10	2	18	5
2	21.3	12	18.6	18	12	5	-5	20
3	21.9	14	17.3	-39	12	6	3	3
4	21.9	10	14.5	10	10	11	7	0
5	21.9	9	13.9	8	10	7	0	0
6	21.9	8	16.1	1	7	10	6	0
7	21.9	8	16.0	0	6	9	6	0
8	21.9	8	15.7	7	10	6	0	-1
9	21.9	9	15.3	9	10	6	2	2
10	21.9	11	14.8	29	12	11	5	4
11	21.9	13	13.4	21	15	10	3	9
12	21.9	15	12.8	2	16	9	0	-15
13	21.9	16	12.3	2	16	9	0	-15
14	21.9	16	12.3	2	16	9	0	-15
15	21.9	16	12.3	2	16	9	0	-15
16	21.9	16	12.3	2	16	9	0	-15
17	21.9	16	12.3	2	16	9	0	-15
18	21.9	16	12.3	2	16	9	0	-15
19	21.9	16	12.3	2	16	9	0	-15
20	21.9	16	12.3	2	16	9	0	-15
21	21.9	16	12.3	2	16	9	0	-15
22	21.9	16	12.3	2	16	9	0	-15
23	21.9	16	12.3	2	16	9	0	-15
24	21.9	16	12.3	2	16	9	0	-15

VK EAST — ASIA

UTC	MUF	dB μ	FOT	7.1	14.2	18.1	21.2	24.9
1	9.1	-4	7.5	20	-8	-29	20	16
2	9.2	-4	7.2	-23	-6	-25	18	16
3	9.5	-4	6.9	-24	-6	-24	17	16
4	9.5	-4	7.9	-23	-6	-24	17	16
5	9.4	-2	7.8	-20	-6	-26	17	16
6	9.4	-2	7.5	-15	-6	-26	17	16
7	8.8	2	7.3	-7	10	37	17	16
8	8.4	7	7.0	4	-16	3	22	17
9	7.8	16	6.4	17	27	-39	22	17
10	7.2	19	5.8	20	30	-42	22	17
11	6.7	22	5.5	20	30	-42	22	17
12	6.4	24	5.2	20	30	-42	22	17
13	6.2	27	5.0	20	30	-42	22	17
14	6.0	27	4.9	20	30	-42	22	17
15	5.6	27	4.5	14	11	1	17	11
16	5.4	27	4.3	11	8	1	17	11
17	5.0	27	4.0	6	4	1	17	11
18	4.7	27	3.7	1	0	1	17	11
19	4.6	26	3.7	-1	0	1	17	11
20	3.9	25	3.1	-19	0	1	17	11
21	3.6	1	2.9	-12	0	1	17	11
22	3.3	0	2.7	-5	0	1	17	11
23	3.4	4	2.8	-6	23	16	8	-5
24	3.7	-3	3.0	-15	-10	34	16	8

VK SOUTH — ASIA

UTC	MUF	dB μ	FOT	7.1	14.2	18.1	21.2	24.9
1	18.6	11	14.9	12	12	7	2	2
2	19.1	11	15.5	11	12	8	0	1
3	19.6	11	16.2	11	13	9	0	1
4	19.7	12	16.3	12	13	9	0	1
5	19.8	12	16.2	13	13	10	0	1
6	19.7	13	16.5	39	15	15	0	1
7	19.4	14	15.9	26	18	16	11	0
8	18.8	16	15.3	7	22	18	11	0
9	17.8	21	14.4	28	30	20	10	0
10	16.2	23	13.5	39	30	17	5	0
11	15.2	24	12.2	42	27	12	2	22
12	14.1	25	11.2	45	24	8	0	34
13	13.3	25	10.6	46	21	8	1	17
14	12.7	26	10.1	46	18	3	24	15
15	11.6	26	8.6	45	15	3	30	30
16	11.6	26	9.1	44	12	13	37	37
17	11.1	21	8.6	43	9	0	0	0
18	10.5	27	8.1	41	4	16	0	0
19	8.8	25	6.3	38	5	0	0	0
20	8.1	26	5.2	35	29	0	0	0
21	11.5	20	8.8	30	7	17	0	0
22	14.8	16	11.3	3	17	6	-6	24
23	17.0	13	13.2	20	16	11	4	0

VK EAST — EUROPE										VK SOUTH — EUROPE										VK WEST — EUROPE									
UTC	MUF	dBu	FOT	7.1	14.2	18.1	21.2	24.9		UTC	MUF	dBu	FOT	7.1	14.2	18.1	21.2	24.9		UTC	MUF	dBu	FOT	7.1	14.2	18.1	21.2	24.9	
1	9.3	5	3	7.2	-23	0	-13	-29	...	2	9.1	6	8	7.2	27	10	-36	...	...	1	10.6	13	12	4	5	-12	-31	...	
2	8.5	11	8.7	28	-1	-14	-30	...	...	3	8.1	-11	7.2	-36	0	-10	-24	...	...	2	9.6	4	7.5	-12	0	16	35	...	
3	15.5	-14	6.7	33	0	-12	-26	...	...	4	10.1	11	7.2	-36	0	-10	-24	...	...	3	9.5	3	7.5	-25	-1	-14	-31	...	
4	12.8	10	7.7	...	...	...	...	...	...	5	13.9	-1	11.1	...	1	0	-4	-15	...	...	4	11.3	3	7.5	-25	-1	-14	-31	...
5	15.8	2	12.6	...	...	...	...	...	...	6	17.3	3	13.8	...	-3	3	1	-4	...	...	5	14.8	2	11.8	1	1	-4	15	...
6	15.1	5	14.5	...	...	...	...	...	...	7	19.5	5	15.8	...	-4	4	5	0	...	...	6	18.4	5	14.8	0	5	3	...	
8	10.7	8	15.3	...	...	...	...	...	...	8	20.2	7	16.6	...	3	7	3	...	...	8	22.5	7	16.3	3	7	...			
9	20.6	1	18.9	...	...	...	...	...	...	9	19.8	8	16.1	23	0	7	7	3	...	...	9	23.6	8	19.3	0	9	10	7	...
10	20.9	15	16.9	31	18	18	15	8	...	10	18.8	10	15.2	...	6	10	8	1	...	...	10	22.9	10	18.8	3	11	11	7	...
11	19.3	18	15.5	-6	23	20	14	5	...	11	17.5	12	14.1	...	12	12	7	1	...	...	11	21.6	11	15.0	...	...	...	...
12	17.9	21	14.3	17	30	20	12	1	...	12	16.1	18	12.9	12	10	13	5	7	...	...	12	20.2	14	16.3	29	9	13	12	...
13	17.1	23	13.8	26	29	20	11	-2	...	13	14.8	21	11.8	14	22	12	1	-14	...	...	13	18.6	18	15.0	2	24	19	12	...
14	16.3	25	12.9	36	30	20	9	-6	...	14	14.0	25	11.1	33	25	11	-2	-32	...	...	14	17.2	21	13.8	28	26	19	10	...
15	15.5	26	12.3	41	30	18	6	...	...	15	13.3	27	10.5	36	24	8	-7	-38	...	...	15	18.4	22	13.3	36	28	18	7	...
16	14.7	27	11.5	44	29	15	2	-16	...	16	12.7	28	10.0	42	23	5	-11	-34	...	...	16	15.7	25	12.4	41	24	17	4	...
17	13.5	27	10.6	43	24	7	...	-31	...	17	12.2	29	9.5	42	21	2	-16	...	...	17	15.0	26	12.0	44	28	14	1	-17	...
18	11.8	28	8.2	41	17	-3	-23	...	...	18	11.7	29	9.0	42	19	-1	-26	...	...	18	13.4	26	10.4	43	23	5	-11	-34	...
19	10.5	29	8.2	39	10	-1	-38	...	...	19	11.1	29	8.5	41	15	8	-29	...	...	19	11.9	27	9.1	41	17	-4	-24	...	
20	9.8	29	7.6	38	8	-21	...	...	...	20	10.5	29	8.0	40	11	-14	-37	...	...	20	11.2	28	8.5	40	13	-10	-31	...	
21	9.2	27	7.1	32	3	-24	...	...	...	21	10.1	29	7.7	38	8	-17	...	...	21	10.8	28	8.2	40	11	-13	-36	...		
22	8.5	18	5.5	16	-1	-27	...	...	...	22	8.3	24	6.4	25	-4	-39	...	...	22	9.7	28	8.4	40	10	-14	-37	...		
23	8.5	10	15.3	...	...	...	...	...	...	23	8.5	11	4	-31	...	...	...	...	23	10.1	28	7.8	37	6	-20	...			
24	9.5	3	7.4	-13	1	-14	-31	...	...	24	10.4	11	8.0	-3	5	10	27	...	...	24	10.7	19	7.1	19	0	-27	...		

VK EAST — EUROPE (long path)										VK SOUTH — EUROPE (long path)										VK WEST — EUROPE (long path)									
UTC	MUF	dBu	FOT	7.1	14.2	18.1	21.2	24.9		UTC	MUF	dBu	FOT	7.1	14.2	18.1	21.2	24.9		UTC	MUF	dBu	FOT	7.1	14.2	18.1	21.2	24.9	
1	9.7	3	7.3	-28	-2	-8	-20	...	...	1	8.9	7	6.8	26	0	-12	-26	...	...	1	8.5	18	6.6	-38	-3	-11	-23	...
2	9.8	0	7.4	-20	2	-9	-22	...	...	2	9.0	-2	6.9	18	0	14	-30	...	...	2	8.5	-14	6.6	-31	-5	-13	-27	...
3	9.8	9	7.6	-12	4	-2	-16	...	...	3	9.1	3	6.9	-10	6	-10	-34	...	...	3	8.8	-10	6.6	-25	1	17	-13	...
4	9.8	9	7.4	-2	4	-12	-29	...	...	4	8.7	5	6.8	-1	-1	-21	...	...	4	8.2	-8	6.4	-18	-4	-19	-36	...	
5	8.5	12	6.8	6	1	-18	-39	...	...	5	8.1	10	6.3	6	-5	-29	...	...	5	7.7	-6	6.0	-10	-6	-25	...		
6	8.5	23	5.9	24	2	-32	...	...	...	6	8.1	15	6.4	14	-5	-32	...	...	6	7.8	0	6.1	-5	-7	-38	...		
7	10.3	24	8.2	27	10	-29	...	...	...	7	9.5	22	7.5	23	3	-21	...	...	7	9.0	8	7.1	2	-2	-21	...		
8	13.2	24	10.5	31	21	8	-8	-27	...	8	11.9	23	9.5	31	15	-2	-20	...	...	8	11.2	13	8.9	6	7	-8	-24	...
9	11.7	22	8.9	18	17	3	-10	-30	...	9	13.5	23	10.4	30	21	-7	-26	9	13.8	15	10.8	11	14	3	-9	-27	...
10	11.3	11	8.5	8	11	1	-1	-29	...	10	10.0	18	7.7	14	6	-13	-32	...	...	10	11.7	16	9	11	10	13	-38	...
11	13.9	8	11.0	-33	8	3	-15	...	...	11	9.0	8	6.9	-1	1	-17	-36	...	...	11	9.2	9	7.1	2	1	-17	-35	...
12	15.1	1	10.4	12	12.4	8	6.6	-23	8	0	-9	-25	12	9.3	9	7.1	-12	0	-14	-30	...
13	14.0	-1	10.1	13	11.7	0	6.3	3	-1	-10	-25	13	12.9	2	8.8	-39	3	-1	-9	-22	...
14	12.0	-8	9.3	...	...	...	...	...	...	14	11.2	-7	7.8	...	0	-3	-11	-24	...	...	14	12.4	-4	10.1	...	...	...	...
15	11.4	-13	8.8	15	10.7	-2	7.8	...	-1	-3	-10	-23	15	11.6	-10	8.0	-3	-4	-11	-22	...
16	10.9	-17	8.3	...	...	...	...	...	...	16	10.3	-16	7.2	...	-2	-3	-10	-23	...	...	16	11.0	-15	7.5	...	...	...	...
17	10.5	-19	7.9	...	...	...	...	...	...	17	10.3	-18	7.2	...	-2	-3	-10	-22	...	...	17	10.8	-19	7.2	...	...	...	...
18	11.0	-18	8.2	...	...	...	...	...	...	18	10.0	-16	7.8	...	-5	-6	-18	...	...	18	10.4	-10	7.8	...	...	...	...
19	12.9	-9	10.2	...	...	...	...	...	...	19	12.6	-8	9.7	...	-5	-2	-5	14	...	...	19	10.1	-26	7.0	...	...	...	...
20	13.9	-5	10.8	...	...	...	...	...	...	20	12.9	-8	10.1	...	-4	-2	-6	...	...	...	20	10.7	-19	7.4	...	...	...	...
21	12.2	-7	9.4	...	...	...	...	...	...	21	11.2	-12	8.8	...	-2	-3	-9	-21	...	...	21	10.7	-10	7.8	...	...	...	...
22	10.4	-11	8.6	...	...	...	...	...	...	22	10.0	-14	7.7	...	-1	-11	-25	...	...	22	9.5	-32	6.4	...	...	...	...
23	10.1	-9	7.7	...	...	...	...	...	...	23	9.4	-13	7.2	...	0	-7	-17	-35	...	...	23	9.0	-35	5.9	...	...	...	...
24	9.8	-8	7.4	-35	1	-7	-18	-36	...	24	9.0	-11	6.9	34	0	0	-22	-35	...	...	24	8.6	-30	6.6	...	...	

VK EAST — MEDITERRANEAN										VK SOUTH — MEDITERRANEAN										VK WEST — MEDITERRANEAN									
UTC	MUF	dBu	FOT	7.1	14.2	18.1	21.2	24.9		UTC	MUF	dBu	FOT	7.1	14.2	18.1	21.2	24.9		UTC	MUF	dBu	FOT	7.1	14.2	18.1	21.2	24.9	
1	9.1	-3	8.9	-22	0	-14	-30	...	...	1	9.0	0	6.9	-14	0	-17	-35	...	...	1	8.3	9	6.4	5	-8	-32	...	
2	8.6	-12	6.5	-31	-1	-14	-29	...	...	2	8.4	-2	6.5	-35	-2	-17	-34	...	...	2	8.2	-2	6.0	-8	-8	-31	...	
3	14	1	13.5	...	...	...	...	...	...	3	11.2	0	10.7	1	1	-13	-29	...	...	3	11	2	10.7	28	6	10	-25	...
4	17.4	4	13.5	4	18.0	5	13.9	...	1	5	3	-4	4	16.2	6	12.5	6	5	1	12	...
5	22.7	7	17.0	...	...	...	...	...	...	5	21.2	7	17.4	...	-2	7	7	4	...	...	5	21.1	8	15.8	4	9	8	...
6	25.0	8	19.4	...	...	...	...	...	...	6	21.2	6	17.4	...	...	...	...	...	...	...	6	21.4	8	17.1	...	2	8	...
7	24.4	9	18.6	7	21.5	7	17.3	...	-2	7	7	3	7	21.5	8	17.3	...	3	9	...	
8	23.7	9	18.3	8	20.9	7	17.0	...	-2	6	7	3	8	21.5	8	17.2	...	1	8	...	
9	22.4	11	19.6	...																									

HAMADS

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\$30; COAX UR67 27 m \$27, ICOM IC-22S needs repair \$50. Ron VK2BKN QTHR phonefax (069) 72 2021

FOR SALE VIC

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● **SHACK CLEARANCE**, Nally self supporting tilt over windup tower, 9 element ATN log periodic SS hardware, Create HD auto rotator, Kenwood PS30 Power supply, all as new condition, solid state power supply 25 amp new, plus more. Patrick VK3GEE (051) 99 2811

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FOR SALE SA

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● **YAESU FT-411** 2 m handheld with accessories, as new, original carton s/n 9D080112 \$400 ONO. John VK5KBE QTHR (08) 725 7259.

FOR SALE WA

● **CODAN 8528** transceiver with manual, 7208 ATU, 600 Ch, all Aust RFDS, HF radphone, sel call, beacons, fitted with amateur options and CB options, books, cradle \$2200. Allan VK6LL QTHR (09) 446 1568.

- **WANTED FOR** restoration of Military vehicle WS No 19 xmtr receiver or any parts including cables and control boxes. Karl VK2KKT (02) 456 4161 after 6 pm.
- **UNIDEN** 2510 10 m transceiver or similar. Bill VK2BWW QTHR (065) 68 224 BH or (065) 68 7227 AH.

- NINETEEN inch rack – cabinet type referred. Morris VK3DCO (03) 824 8968.
- COLLINS equipment 515-1 receiver, 312B-4 speaker console. Ian VK3KCM OTHR (03) 74 7793 evenings.
- WANTED 500 Hz CW filter for FT101E. Tim VK3BCN OTHR (03) 751 1563 AH.
- ICOM IC901 band modules, 10 m and 6 m. Damien VK3CDI (054) 27 3121.
- MILITARY receiver AR8, preferably in complete state, working or not. Will consider all offers or trade for Yaesu FL200B HF SSB/CW transmitter and matching F100B HF SSB/CW receiver. Peter VK3FDX (059) 62 2563 AH (059) 64 2255 BH.
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MHz, 160-183 MHz 2 separate models 12 volt
operation details from. Fred VK4DY PO Box 17,
Woodford QLD 4514. (074) 96 1186.
- **VALVE DATA handbooks, lists, equivalents**
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Westinghouse, etc. Valve testers with Data
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97 6387 or PO Box 245, Ravenshoe Qld 4872.

- BUY OR BORROW for copying RSGB
Radio Communication, July 1985. Kurt VK5KI
QTHR (08) 264 1902.

- "SHIMIZU 105S" noise blanker board or legible circuit diagram; also FM board. Blower, Dayton or similar, to suit pair of 4CX250B. Bill VK7WR QTH (002) 44 4089.

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WIA News

News on the 80 m DX Window

In discussions with the Spectrum management Agency (SMA) on 5 December last year, the WIA was told that, following their monitoring of the 80 m DX Window, the SMA was not impressed by the many instances of disgraceful behaviour of a small number of amateurs who frequented the segment. These operators are not giving fellow amateurs a fair go, with instances of deliberate interference to other local operators and other examples of inappropriate on-air behaviour, including out-of-band operation.

While the WIA's SMA Liaison team put forward a proposal to permit amateurs access to a wider band, between 3750 and 3800 kHz, the SMA pointed out that

amateurs were faced with three choices:

- (1) retaining the present window,
- (2) expansion of the window, or
- (3) withdrawal of the window.

An SMA spokesman said the easy option was to withdraw the window and that this was a serious consideration, given the prevailing circumstances.

However, in discussions between the WIA and SMA, it was decided that, if agreement could be obtained from the primary users in the segment between 3750 and 4000 kHz, amateurs might be able to share usage with them on a secondary basis, then the SMA might consider a submission for an increased allocation.

With the cooperation of the SMA, the WIA has obtained a list of primary users in this segment

and is writing to them with a view to obtaining responses by the end of January in order to submit a new proposal at the earliest opportunity in 1995.

Meanwhile, the SMA is to continue monitoring the DX Window. Operators using it should note that the SMA has warned that transmissions must remain within 3796-3800 kHz, which effectively means that for SSB voice transmissions, the carrier of a lower sideband signal should be no lower than 3799 kHz in order to keep the transmission sidebands within the DX Window.

In other words, there is only one SSB voice channel available in the DX Window. Don't "hog" it, give other operators a fair go. Above all, make sure your transmission stays within the Window.

WIA Divisional Bookshops

The following items are available from your Division's Bookshop
(see the WIA Division Directory on page 3 for the address of your Division)

	Ref	List Price		Ref	List Price
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Ant. Compendium Vol 2 Software 5.25" IBM Disk	BR293	\$20.00	MORSE CODE		
Antenna Compendium Vol 2 — ARRL	BR292	\$32.00	Morse Code — The Essential Language	BR223	\$18.00
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Transmission Line Transformers — ARRL	BR329	\$40.00	Passport to World Band Radio	BR346	\$45.00
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